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HARVARD JOURNAL OF ASIATIC STUDIES

VOLUME 9 SEPTEMBER, 1945 NUMBER 1

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HARVARD-YENCHING INSTITUTE

1945

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The *Harvard Journal of Asiatic Studies* is published quarterly under the auspices of the HARVARD-YENCHING INSTITUTE. All manuscripts, books for review, subscriptions, and communications should be addressed to the HARVARD JOURNAL OF ASIATIC STUDIES, 17 Boylston Hall, Cambridge 38, Mass., U. S. A. Cheques should be drawn payable to the HARVARD-YENCHING INSTITUTE.

Subscription, five dollars, U. S. currency, per annual volume.

PRINTED IN THE UNITED STATES OF AMERICA
BY J. H. FURST COMPANY, BALTIMORE, MARYLAND

BUDDHIST-TAOIST MIXTURES IN THE *PA-SHIH-I-HUA T'U* *

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The Taoist contention that Lao-tzŭ went west to convert the Hu and to become the Buddha gave rise to paintings in Taoist temples depicting the various incarnations operated by Lao-tzŭ. Discussions concerning these paintings and the broader phases of the problem of Buddhist-Taoist mixtures, particularly the question of the *Hua-hu-ching* 化胡經, have already been contributed by many scholars, notably PELLIOT and CHAVANNES.[1] From these researches we learn that as early as the Sui dynasty, a certain YANG Su 楊素 saw pictures of Lao-tzŭ converting the people of Chipin on the walls of a Taoist temple.[2] A decree of Emperor Chung-tsung in 705 likewise referred to these paintings.[3] In the *T'u-hua Chien-wên Chih* 圖畫見聞志 written by KUO Jo-hsü 郭若虛 (fl. 11th century) it is asserted that YEN Li-pên 閻立本 of the T'ang dynasty painted a *Hsi Shêng Ching T'u* 西昇經圖.[4] There is also a tradition that WU Tao-hsüan 吳道玄 (d. 792)

* The writer is greatly indebted to Professors J. R. WARE and W. E. CLARK for assistance in the preparation of this article.

[1] Cf. PELLIOT, Les Mo-ni et le Houa-hou-king, *BEFEO* 3 (1903). 318-27; CHAVANNES, Les Pays d'Occident d'après le Wei-lio, *TP* 6 (1905). 539-545, and PELLIOT's review in *BEFEO* 6 (1906). 377-91; PELLIOT and CHAVANNES, Un traité manichéen, *JA* 1913. 1. 116-32; WANG Wei-ch'êng 王維誠, Lao-tzŭ Hua-hu-ching K'ao-chêng 老子化胡經考證, *KHCK* 4. 2. 5-122 (1934); KUWABARA Jitsuzō 桑原隲藏, Rōshi kekokyō 老子化胡經, *Geimon* 藝文 1. 9. 1-14 (1910); SHIBATA Nobukatsu 柴田宣勝, Rōshi kekokyō gisakushaden ni tsuite 老子化胡經僞作者傳に就いて, *SZ* 44. 59-81, 200-32 (1933).

[2] CHÊN Tzŭ-liang's commentary on the *Pien Chêng Lun* 辯正論, *Taishō* 52. 522b. This passage with minor differences is also found in *Pien Wei Lu* 辯僞錄, *Taishō* 52. 759c. The YANG Su mentioned here has a biography in *Sui Shu* 48. The date of his birth is not known, but he died in 606. CH'ÊN Tzŭ-liang wrote an epitaph for the monk Sêng-yüan 僧淵 who died in 602, which would place him in the 2nd half of the 6th and the 1st half of the 7th centuries. Cf. *Hsü Kao Sêng Chuan* 續高僧傳, *Taishō* 50. 574c.

[3] *Fo-tsu T'ung Chi* 佛祖統紀, *Taishō* 49. 371b.

[4] *T'u-hua Chien-wên Chih* 6. 3a (*Hsüeh Chin T'ao Yüan* 學津討原 ed.) YEN was born in the Chên-kuan era (627-49) and died in 673. He was well known for his skill

likewise painted a picture of Lao-tzŭ converting the Hu. This is recorded in a work by K'ANG P'ien 康駢 entitled *Chü T'an Lu* 劇談錄, finished in 895.[5]

During the Mongol period we find that the number of such incarnations manifested by Lao-tzŭ had increased to 81, and it is stated that scenes of these incarnations were carved on stone tablets in many temples.[6] Then, during the debate between the Buddhists and Taoists before Mangu Khan in 1255, a text entitled *Pa-shih-i-hua T'u* 八十一化圖, which described in greater detail these incarnations in the mythical career of Lao-tzŭ, was mentioned for the first time. It was linked with the *Lao-chün Hua-hu Ch'êng-fo Ching* 老君化胡成佛經 as the object of bitter Buddhist denunciations. The Buddhists felt that these books were insulting to their religion, for they represented the Buddha as being only one of the incarnations of Lao-tzŭ. The Buddhist protagonist

in painting. For his biography, see *Chiu T'ang Shu* 77 and *Hsin T'ang Shu* 100. It may be that such a painting could still be seen during the Mongol dynasty, for CH'IU Ch'u-chi 丘處機 was given a picture of Lao-tzŭ crossing the border, painted by YEN Li-pên, and asked to write something on it. Cf. WALEY, *The Travels of an Alchemist*, 55.

The *Hsi Shêng Ching* mentioned here is a well-known Taoist work and is to be found in the Taoist canon, vol. 346-47. For a description of this work, see PELLIOT, *BEFEO* 3. 322-27; 6. 379; 8. 515-17. It is not known when and by whom it was composed, but it probably existed as far back as the Chin 晉 dynasty, for it is quoted in the *Chêng Wu Lun* 正誣論, parts of which are preserved in the *Hung Ming Chi* 弘明集, *Taishō* 52. 7-9. A *Hsi Shêng Ching* is mentioned in *Chiu T'ang Shu* 47. 2b (*T'u-shu Chi-ch'êng* ed.). In *Hsin T'ang Shu* 59. 3a there is listed a commentary on the work in 2 c. by WEI Ch'u-hsüan 韋處玄, which is also found in *Sung Shih* 205. 6a. Another commentary by TAI Hsien 戴詵 is mentioned in *Hsin T'ang Shu* 59. 3a. CH'AO Kung-wu 晁公武 of the Sung dynasty, in his *Chün Chai Tu-shu Hou-chih Tao-shu-lei* 郡齋讀書後志道書類 29b-30b, mentions two other commentaries, one by T'ung-hsüan-tzŭ 同玄子 of the T'ang dynasty, and one by Hsü Tao-mao 徐道邈, dynasty unknown. In the Tunhuang fragment of the *Hua-hu-ching*, *Taishō* 54. 1266c, there is a reference to the *Hsi Shêng Ching*, which said that Lao-tzŭ communicated the contents of the work to his disciple YIN Hsi when he passed through Han-ku Kuan. This same story concerning the origin of the work is found in CH'AO, *op. cit.* 30a. In the *Hsi Shêng Ching* as found in the Taoist canon, the opening sentence reads, "Lao-chün ascended to the west and propagated the doctrine in India. He was known as the ancient teacher, and through meritorious deeds on earth he entered Nirvāṇa which is without end and without beginning, and which lasts forever and ever."

[5] *Chü T'an Lu* 2. 14a (*Hsüeh Chin T'ao Yüan* ed.).

[6] *Fo-tsu Li-tai T'ung-tsai* 佛祖歷代通載, *Taishō* 49. 707c.

secured a decision against the Taoist Li Chih-ch'ang 李志常 (1193-1278), but the Taoists persisted in circulating the controversial literature, and in 1258 another debate was held before Kubilai Khan, at which meeting Confucianists were also present. Due mainly to the efforts of a brilliant Tibetan, hPhags-pa (1239?-80),[7] the Taoists were again humbled and all copies of the *Hua-hu-ching* and the *Pa-shih-i-hua T'u* were ordered destroyed, and all paintings of the incarnations removed from view.[8]

The *Pa-shih-i-hua T'u* has come down to us mainly through quotations made from it by Buddhist writers. The chief source in this category is the *Pien Wei Lu* 辯僞錄 by Hsiang-mai 祥邁, finished in 1291 as a refutation of the *Hua-hu-ching* and the *Pa-shih-i-hua T'u*. The other source is the °*T'ung-tsai*.

The problem of the authorship of the *Pa-shih-i-hua T'u* remains to be considered. In 1911, H. Mueller reported the discovery of a text in the Museum für Völkerkunde in Berlin, entitled *Chin-ch'üeh Hsüan-yüan T'ai-shang-lao-chün Pa-shih-i-hua T'u Shuo* 金闕玄元太上老君八十一化圖說 in 2 fasc., published in 1598.[9] Pelliot and Chavannes in their article "Un traité manichéen"

[7] Written variously in Chinese, 拔合斯八, 帕克斯巴, 八思巴, 八合思八, 發思八, 拔思發. Full Tibetan name was hGro-mgon hPhags-pa. Biography in *Fo-tsu T'ung-chi, Taishō* 49.434bc; *Fo-tsu Li-tai T'ung-tsai, Taishō* 49.707bc; *Yüan Shih* 202. hPhags-pa was made imperial advisor by Kubilai Khan and was recognized as the head of the Buddhist church. Cf. Rockhill, The Dalai Lamas of Lhasa, *TP* 11 (1910).2; Huth, *Geschichte des Buddhismus in der Mongolei*, 2.139-159. Rockhill and Huth both indicated that hPhags-pa died in 1279, but the *T'ung-chi* and *T'ung-tsai* both give 至元十七年 or 1280. This difference is due to the fact that Huth and Rockhill used the method devised by Alexander Csoma for computing Tibetan chronology. Pelliot has pointed out in an important article, Le cycle sexagénaire dans la chronologie tibétaine, *JA* 1913.1.633-67 that Csoma's computations were erroneous, that the first year of the first Tibetan cycle was not 1026 as Csoma calculated, but was 1027. Cf. also Laufer, The application of the Tibetan sexagenary cycle, *TP* 14 (1913).569-96. There is also some uncertainty about the age of hPhags-pa when he died. Huth said he was 46, but the Chinese records put the age at 42. I have followed the Chinese records for his birth.

[8] For these debates, cf. °*t'ung-tsai, Taishō* 49.707c-8c; *Pien Wei Lu, Taishō* 52.772ab. Translations of the edicts against the Taoists may be found in Chavannes, Inscriptions et pièces de chancellerie chinoises de l'époque mongole, *TP* 5 (1904).375-87.

[9] H. Mueller, Über das taoistische Pantheon der Chinesen, *Zeitschrift für Ethnologie* 1911.408-11.

wrote that one of them examined the text for a moment and then concluded that the contents were sufficient to justify the supposition that it was the *Pa-shih-i-hua T'u*, possibly with some alterations, which figured in the debates of 1255 and 1258.[10] At the beginning of this text, LING-HU Chang 令狐璋 is named as the compiler, and SHIH Chih-ching 史志經 as the one who quoted from the sacred texts. Now these same two individuals were expressly singled out by Hsiang-mai for criticism. In one place, he wrote, "LING-HU Chang was the first to compile the erroneous doctrine, while SHIH Chih-ching also expanded the heretical texts. By imitating the 82 shrines of the Tathāgata,[11] they assembled the 81 incarnations of Lao-tzŭ." [12] In another place, he wrote, "LING-HU Chang was the first to put together the false doctrine, and SHIH Chih-ching expanded the heretical texts. They could not distinguish between beans and wheat, nor could they differentiate between past and present.[13] They appropriated the malicious words of WANG Fu and took over the feeble remarks of the *Hsi Shêng Ching*. By imitating the 82 shrines of the Buddhists, they put together indiscriminately the 81 incarnations of Lao-tzŭ, in order to get the number nine times nine." [14] In all probability these two

[10] *JA* 1913.1.118-19.

[11] I have not been able to find out what these 82 shrines refer to.

[12] *Pien Wei Lu, Taishō* 52.752c.

[13] Read 匪 for the misprint 匡. Cf. *Tōk.* 露.11.67b and *Kyōto* 35.3.30b.

[14] *Pien Wei Lu, Taishō* 52.767c. We have already made some comments on the *Hsi Shêng Ching* in note 4. For WANG Fu, author of *Hua-hu-ching*, see articles mentioned in note 1. I would like to add here some remarks concerning the titles given to WANG Fu. P'EI Tzŭ-yeh 裴子野 (467-528) in his *Kao Sêng Chuan* 高僧傳, quoted in *Pien Chên Lun, Taishō* 52.522c gave first *chi-chiu* 祭酒 and then *tao-shih* 道士. (For P'EI, cf. *Liang Shu* 30. The title of his work is not certain. The *Sui Shu* 33.8b gives it as *Chung Sêng Chuan* 衆僧傳 in 20 c., while the *Chiu T'ang Shu* 46.16a and *Hsin T'ang Shu* 59.5a read *Ming Sêng Lu* 名僧錄 in 15 c.). Other sources, such as the *Chin Shih Tsa Iu* 晉世雜錄 by CHU Tao-tsu 竺道祖, who died in 419 (*Kao Sêng Chuan, Taishō* 50.363a) and the *Yu Ming Lu* 幽明錄 of LIU I-ch'ing 劉義慶 (420-78) used only *tao-shih*.

The explanations of the term *chi-chiu* given in *Tz'ŭ-yüan*, 午 195, or *Tz'ŭ-hai*, 午 216 do not seem to apply to WANG Fu. From *Hou Han Shu* 105.2b, however, we learn that during the 2nd century AD, the Taoists were organizing themselves under CHANG Ling of Ho-ming Shan 鶴鳴山 in Ssŭ-ch'uan, who was leading people astray with the charms he devised. All those who followed him presented five *tou* of rice,

persons, LING-HU Chang and SHIH Chih-ching were the compilers of the *Pa-shih-i-hua T'u*, as PELLIOT and CHAVANNES indicated in their article.[15]

I have not been able to find anything about LING-HU Chang. SHIH Chih-ching was a disciple of CH'IU Ch'u-chi 丘處機 (1148-1227),[16] better known as Ch'ang-ch'un-chên-jên 長春眞人, the Taoist who made a trip to Central Asia in 1221-24 upon the invitation of Genghis Khan, presumably for the purpose of retracing the footsteps of Lao-tzŭ in his trip to the west.[17]

The main interest which the *Pa-shih-i-hua T'u* has for us lies in the concrete evidence which it provides of the widespread and extensive borrowings which the Taoists made from Buddhist literature. In practically every passage quoted by Hsiang-mai, traces of Buddhist concepts and teachings can be found. In this paper, however, we shall deal only with the descriptions of the 10th, 34th, and 42nd incarnations, as these tell of the birth and activities of Lao-tzŭ and can be checked easily with Buddhist sources.

hence they were called by the populace Five *Tou* Rice Bandits. Neophytes of the sect were called *kuei-tsu* 鬼卒, but later they were designated *chi-chiu*. It seems that we must regard the title in this light in the case of WANG Fu. Cf. also *Êrh Chiao Lun* 二教論, in *Kuang Hung Ming Chi* 廣弘明集 8, *Taishō* 52.140b; J. R. WARE, The Wei Shu and the Sui Shu on Taoism, *JAOS* 53(1933).229-30 note.

It is usually said that the term *tao-shih* started in the Eastern Han dynasty with the followers of CHANG Ling. However, the Buddhists tell a different story. In the *Fa-yüan Chu-lin* 法苑珠林 *Taishō* 53.703c it is stated that "from the Han and Wei dynasties to the Fu-Yao 符姚 periods (351-417) people also designated [Buddhist] monks as *tao-shih*." Again in *op. cit.* 53.704a, a passage reads, "Beginning with the Han and Wei dynasties and ending with the Fu-Yao eras, everyone designated the monks as *tao-shih*. During the reign of Emperor T'ai-wu of the Northern Wei dynasty, K'OU Ch'ien-chih 寇謙之 for the first time pilfered the term *tao-shih* and secretly substituted it for *chi-chiu*." The *Taishō* edition merely gives 太武世 as the date, but the *Ssŭ-pu Ts'ung-k'an* edition of the *Fa-yüan Chu-lin* 69.5a reads the 2nd year of the reign of Emperor T'ai-wu 太武二年 or 425. Cf. also Tao-an 道安, *Êrh Chiao Lun*, quoted in *Kuang Hung Ming Chi*, *Taishō* 52.140c; *Pien Chêng Lun*, *Taishō* 52.545bc. The passage in *Fa-yüan Chu-lin* concerning *chi-chiu* has already been alluded to by PELLIOT in *BEFEO* 6.380. For K'OU Ch'ien-chih, see *Wei Shu* 42.3b, 114.11a ff.

[15] *JA* 1913.1.118-19 note.

[16] Cf. *Kan-shui Hsien-yüan Lu* 甘水仙源錄 (*Tao Tsang* 612), 6.18b.

[17] The travels of CH'IU Ch'u-chi, written by one of his followers, LI Chih-ch'ang, and entitled *Ch'ang-ch'un Chên-jên Hsi-yu-chi* 長春眞人西遊記 has been translated into English by A. WALEY, *The Travels of an Alchemist*, 1931.

The description of the 10th incarnation concerns the birth of Lao-tzŭ.

"During the *chien-wu* 建午 [18] month of the year *kêng-yin* 庚寅 of King Yang-chia, the 18th king of the Yin dynasty,[19] Lao-tzŭ entered the mouth of a Jade Maiden, Hsüan-miao 玄妙,[20] and after 81 years, on the 15th day of the 2nd month, the 9th year, *kêng-yin* of Wu-ting,[21] the holy mother, splitting her left armpit while grasping a plum tree, gave birth to him.[22] As soon as he was born, he took nine steps and from each footstep there sprang up lotus flowers.[23] Nine dragons spat water [to bathe him].[24] He was complete with the 72 lakṣanas and 81 notable physical characteristics.[25] With his left hand pointing to heaven and his right hand to earth, he said, 'In heaven and on earth, only the Way [26] is to be revered.

[18] The 5th month in the lunar calendar. Cf. *Tz'ŭ-yüan,* 辰 62b, 月建.

[19] This agrees with *Shih-Chi* 3.3a. Cf. also Tung Tso-pin 董作賓, Chia-ku-wên Tuan-tai Yen-chiu-li 甲骨文斷代研究例 in *Ch'ing-chu Ts'ai Yüan-p'ei Hsien-shêng Liu-shih-wu-sui Lun-wên-chi* 慶祝蔡元培先生六十五歲論文集, vol. 1, chart facing 331.

[20] Hsüan-miao is probably the Taoist attempt to render Māyā. The Buddhists usually use Mo-yeh 摩耶, Ta-shu 大術, or Ta-huan 大幻.

[21] Wu-ting was the 22nd king.

[22] Buddha is usually said to have been born through the right rib of Māyā. It was under a sal tree that the birth took place. Probably the Taoists deliberately substituted the plum tree for Lao-tzŭ, as the latter's surname was said to have been Li 李 'plum tree.' The date, 15th day of the 2nd month, is usually given as the day in which Buddha attained Nirvāṇa.

[23] Seven is the number of steps given in the *Introduction to the Jātakas,* Warren, *Translations,* 47, and in the *Kuo-ch'ü Hsien-tsai Yin-kuo Ching* 過去現在因果經, *Taishō* 3.625a. However the *Fo Pên Hsing Chi Ching* 佛本行集經, *Taishō* 3.687b says that he took seven steps toward each of the four directions, while the *Fang-kuang Ta-chuang-yen Ching* 方廣大莊嚴經 (*Lalitavistara*), *Taishō* 3.553ab informs us that he took seven steps toward each of the four cardinal directions and toward the zenith and nadir also.

[24] In Chu Fa-hu's 竺法護 *P'u Yüeh Ching* 普曜經, *Taishō* 3.494b, we read that nine nāgas sent down fragrant water from the sky to bathe the Buddha. The Taoists have taken this story as their own and said in addition that these jets became nine wells. Li Tao-yüan 酈道元 in *Shui Ching Chu* 水經注 23.5b (*Ssŭ-pu Ts'ung-k'an* ed.) mentions a Lao-chün-miao in K'u-hsien 苦縣 (Honan) which had nine wells.

[25] The Buddha had 32, not 72 lakṣanas and 81 notable physical characteristics. Cf. *Lakkhana Suttanta* in *Dīgha Nikāya* (P. T. S.) 3.142-79.

[26] The text here has 唯道獨尊 and the reading is the same in *Tōk.* 露.11.60b and *Kyōto* 35.3.22b. However the Tunhuang *Hua-hu-ching, Taishō* 54.1266b has

I now shall explain and propagate the doctrine without superior to bring salvation to all. . . .' " [27]

The description of the 34th incarnation is as follows:

" Lao-chün said to the Hu king, ' When I dispatch my disciple as a Buddha to you, you must accept him as your teacher.' Thereupon he had YIN Hsi transformed into the Buddha and sent him forth to serve as teacher to the Hu. YIN Hsi commanded the Hu to become śramaṇas, taught them the laws of the Buddha, and explained the *Sūtra in 42 Sections*." [28] It is further stated that " Lao-chün went to Śrāvastī and transforming himself into a Buddha sat on a seven-jewelled throne.[29] His body measured up to myriads of *chang* 丈 in height, and it filled the void entirely." It is also stated that " Lao-chün wanted to reform the Buddhist religion. Therefore, during the 9th year of King Chuang of the Chou dynasty, while in Brahmaloka, he ordered his disciple King Fan-t'o to mount the hare in the moon and commit himself to the womb of Māyā in India. On the 8th day of the 4th moon of the 10th year, Fan-t'o was born through the right rib. Afterwards he retired to the Himālayas for six years of self-cultivation. When

唯我獨尊. This corresponds to the Buddhist Chinese texts, for the Buddha in his shout of victory exclaimed that he was the only reverent one. Cf. *P'u Yüeh Ching*, *Taishō* 3. 494a 我當救度天上天下, 爲天人尊; *Kuo-ch'ü Hsien-tsai Yin-kuo Ching*, *Taishō* 3. 625a 我於一切天人之中最尊最勝; *Fo Pên Hsing Chi Ching*, *Taishō* 3. 687b 世間之中我爲最勝.

[27] *Pien Wei Lu*, *Taishō* 52. 758c.

[28] Some of the more important translations of this work have been made by BEAL, Ch. de HARLEZ, SUZUKI, GABET and HUC from the Mongol, FEER from the Tibetan, and HACKMANN. For a discussion of the various Chinese editions, cf. T'ANG Yung-t'ung, The Editions of the Ssŭ-shih-êrh-chang-ching, *HJAS* 1. 147-155.

SAKAINO in *Shina Bukkyō Seishi* 支那佛教精史 57, thought that it was finished during the Liu Sung 劉宋 era (420-79). Other scholars, like T'ANG and HU Shih, finding the contents of the sūtra alluded to in HSIANG K'ai's 襄楷 memorial to the throne in 166 (cf. FRANKE, *SPAW* 1924. 56 ff.) and in the *Mou-tzŭ Li-huo-lun* 牟子理惑論 (cf. PELLIOT, *TP* 19. 255-433) put the date during the 2nd century. Cf. T'ANG, *Han Wei Liang-chin Nan-pei-ch'ao Fo-chiao-shih* 漢魏兩晉南北朝佛教史 chap. 2; *Hu Shih Lun-hsüeh Chin-chu* 胡適論學近著 1. 177-97.

[29] The ch'i-pao 七寶 or saptaratnāni, are gold (suvarṇa), silver (rūpya), lapis lazuli (vaiḍūrya), crystal (sphaṭika), agate (musāragalva), ruby (lohitamukti), and cornelia (aśmagarbha). Cf. *Divyāvadāna* 297; FINOT, *Les lapidaires indiens* (1896) XIX.

he attained enlightenment, he became similar to the Buddha.[30] All gave him the *hao* of Mo-mo-ni." [31]

The most interesting description is that of the 42nd incarnation, in which the travels and activities of Lao-tzŭ in the west are given.

"Lao-tzŭ entered the kingdom of Magadha and manifested his marvellous lakṣanas to convert the king. He established the religion of the Buddha there. He was named the Buddha of Purity and his *hao* was Mo-mo-ni. Then he went to Śrāvastī, transformed himself into a deity, and descended from the sky accompanied by devas and men. He manifested his body up to myriads of *chang* in height.[32] He also went to Chipin where he subdued the king

[30] The relation between Lao-tzŭ and Fan-t'o 煩陀 is first met with in the *Kuang-shuo-p'in* 廣說品, *Taishō* 52.145c-46a, probably dating from the 6th century or earlier, as it is quoted in the *Hsiao Tao Lun* 笑道論 of Chên Luan 甄鸞 finished in 569. There he is already referred to as Prince Fên-t'o-li 憤陀力 of Chipin. The *Hun-yüan Shêng-chi* 混元聖紀 4.5 ff., biography of Lao-tzŭ dated 1191 and written by Hsieh Shou-hao 謝守灝, also refers to him as Fan-t'o-li. In these two accounts, it is said that while Lao-tzŭ and Fan-t'o-li were in heaven, the latter expressed his admiration for the former and signified his intention of becoming his disciple. Later, after having exhausted his merits in heaven, Fan-t'o-li was reborn on earth as prince of Chipin. There he forgot his former intention and began to kill living things. Lao-tzŭ therefore descended to earth also and finally converted him. Fan-t'o-li became a śramaṇa, assumed the surname Shih 釋, and later attained enlightenment to become the Buddha Śākyamuni.

[31] *Pien Wei Lu, Taishō* 52.759ab. The linking of Buddha, who was considered by the Taoists as a reincarnation of Lao-tzŭ, with Mo-mo-ni brings up an entirely new problem in the mixture of religions in China. In the 42nd incarnation, as we shall see later, Lao-tzŭ also identified himself with Mo-mo-ni. In the Tunhuang *Hua-hu-ching, Taishō* 54.1267b, Lao-tzŭ states that he is not only Buddha but also Mo-mo-ni and the teacher of Confucius. The motive underlying the Taoists' claim is understandable. They wished to make people believe that Lao-tzŭ was the supreme deity over all, that Buddha and Mo-mo-ni were but incarnations of Lao-tzŭ in different forms. By putting these two in a position of inferiority, acknowledging Lao-tzŭ as their master, the Taoists sought to elevate their own belief to a position of supremacy over others.

The term Mo-mo-ni was first translated as the "last Muni" by Pelliot in *BEFEO* 3.321 note 5. However, F. W. K. Müller, while studying some documents found in Turfan, came across hymns with the name Māri Mānī, which he took to be the Syriac words Mār (ī) Mānī, Master Mānī. Cf. Handschriften-Reste in Estrangelo-Schrifte aus Turfan, Chinesisch-Turkestan, *SPAW* 1904.352. On the basis of this discovery, Pelliot proposed in *BEFEO* 4.760 to read Mo-mo-ni as Mār Mānī. For the problem of religious mixtures, cf. Pelliot, *BEFEO* 3.318-27; Chavannes and Pelliot, *JA* 1911.2.499-617; 1913.1.99-199, 261-394.

[32] *Kên-pên Shuo-i-ch'ieh-yu-pu P'i-nai-yeh Yao-shih* 根本說一切有部毘奈耶

and prince. Fire could not destroy him, boiling in a cauldron could not cook him, nor could water drown him.[33] The millions of Hu soldiers all tried simultaneously to destroy him with their bows and arrows, swords and spears. However, streaks of lightning suddenly flashed in all directions, which produced peals of thunder, and which caused the enemies together with their horses to fall prostrate with fear. Pei-kuo Hsien-shêng in the sky praised and extolled these proceedings.[34] Lao-tzŭ also went to T'iao-chih 條支 where he pushed aside a great mountain.[35] He went to Kosala

藥事. *Taishō* 24.38b tells of a brahman who thought he was superior to the Buddha. He looked for the very top of the Buddha's head, but could not see it. He climbed to a higher place, but still could not see it. Then the Buddha told him that even if he should ascend Mt. Sumeru, he would still fail to see the top. Cf. also Divyā. 75. The *A-yü-wang-chuan, Taishō* 50.105b, has the following, "In the kingdom of Śrāvastī he manifested his great supernatural transformations, and when he was subduing the heretical sects, the stately and majestic metamorphosed buddhas which he created magically formed a series which reached up to Akaniṣṭha heaven." Cf. also *Divyā.* 162 for a similar account, also *Kuan-fo San-mei-hai Ching* 觀佛三昧海經, *Taishō* 15.662c.

[33] In the *Hun Yüan Shêng Chi* 4.9b is an account of the attempts of Prince Fan-t'o of Chipin to kill Lao-tzŭ by these means.

The attribute of the Buddha in resisting fire is well attested in Buddhist literature. In the *Ta Yün Lun Ch'ing Yü Ching* 大雲輪請雨經 (*Mahāmeghasūtra*), *Taishō* 19.495c, we read, "If there are devas and men who practice great commiseration, fire cannot burn them, water cannot drown them, poison cannot injure them, knives cannot harm them." Cf. *Questions of King Milinda, SBE* 35.279 and *Jātaka* No. 169 for a similar idea. The *Yin-kuo Ching, Taishō* 3.646ab, records that once the Buddha was given lodging in a house with a fire dragon. In the night the dragon breathed fire which burned the entire house, but Buddha remained unscathed. Cf. *Mahāvagga* 1.15 (*SBE* 13.119-22) for this same story. In *Kên-pên Shuo-i-ch'ieh° tsa-shih* 根本說一切...雜事, *Taishō* 24.210c-12c, there is the story of the Buddha saving a baby from the mother's womb after the latter had been cremated. This same story with some minor variations is also found in *Ching Lü I Hsiang* 經律異相, *Taishō* 53.236bc. The Indian source of the story is Jyotiṣka, the 19th story in the *Divyāvadāna.*

[34] This is undoubtedly an echo of the struggle between Māra and the Buddha. For Pei-kuo Hsien-shêng, whose real name was Liao Fu 廖扶, cf. *Hou Han Shu* 112A. The Taoists extolled him for his remarkable ability of prognostication. It is likely that he is put here as the Taoist counterpart of the Śuddhādivāsas, the deities who witnessed the struggle between Mārā and the Buddha.

[35] T'iao-chih is perhaps Desht. Cf. Chavannes, *TP* 8(1907).176. I have not found anything about the Buddha removing a mountain, but in the *Kên-pên °Yao-shih, Taishō* 24.30c-31a, there is a story of how the Buddha removed a huge stone from the road. The *Kuan-fo San-mei-hai Ching, Taishō* 15.681c, mentions a similiar feat of the Buddha in Kusinagara.

and subdued the 96 heresies there.[36] He went to Kapilavastu where he took the sun with his left hand and the moon with his right and hid them in his head.[37] This caused darkness to prevail in heaven and earth, mountains and rocks to burst asunder and to send pieces flying all about, ocean currents to flow in the reverse direction,[38] and mountain streams to take their course in the air. He also went to Khotan and preached to the Hu king in Nan-chü-shan 南渠山. He ordered YIN Hsi transformed into a golden man,[39] measuring 16 (Chinese) feet in height, his neck girdled by a circular light, his feet standing on the petals of lotus as he descended from the sky making a gesture of reverence. Lao-chün said to the Hu king, 'This is my disciple, whom I shall leave with

[36] The mention of 96 heretical schools is found at an early date in Buddhist literature, although the *Brahmajāla-sutta* in the *Dīgha Nikāya* reported only 62. Mou-tzŭ (2nd century) spoke of 96 sorts of doctrines; cf. PELLIOT, *TP* 19. 318, 413 note 376. In *Ch'u San-tsang Chi-chi* 出三藏記集, *Taishō* 55. 39a, there is a *Chiu-shih-liu-chung Tao* 九十六種道 in 1 c. Cf. also *Tsêng-i-a-han Ching* 增一阿含經 (*Ekottarāgama*), *Taishō* 2. 651c; *Ch'ao-jih-ming San-mei Ching* 超日明三昧經, *Taishō* 15. 542b; *Ta Chih Tu Lun* 大智度論 *Taishō* 25. 228b; *Ch'êng-shih Lun* 成實論 (*Satyasiddhi-śāstra*), *Taishō* 32. 322c. The *Sa-p'o-to P'i-ni P'i-p'o-sha* 薩婆多毘尼毘婆沙 (*Sarvāstivādavinayavibhāṣā*), *Taishō* 23. 536a, tells about the origin of these sects. "The six masters each had 15 sorts of doctrines to teach to their disciples, and as a doctrine each was different from the other. Thus when the disciples received their instructions, each one developed a system different from the other. In this manner, from each teacher issued forth 15 different teachings. The doctrine which the teacher held was also different from those which he taught his pupils, so that the master and students made up 16 systems. In this way, from the six masters there arose 96 different systems."

However, the number 96 was not universally accepted. In the *Fa Ching Lu* 法經錄, *Taishō* 55. 138c, there is listed a *Chiu-shih-wu-chung Tao Ching* 九十五種道經 in 1 c. The following works also give 95: *Fên-pieh Kung-tê Lun* 分別功德論, *Taishō* 25. 31c; *Ch'ien-fo-Yin-yüan Ching* 千佛因緣經, *Taishō* 14. 71a; *Chan-ch'a Shan-ô-yeh Pao Ching* 占察善惡業報經, *Taishō* 17. 904b. For names of the six masters, see *Mahāvy.* 3544-50.

[37] Cf. *Taishō* 50. 102ab and PRYZLUSKI, *A-yü-wang-tchouan*, 244.

[38] In the *Mahāvagga* 1. 20. 16 (*SBE* 13. 130-31), it is related that as a result of a heavy rain, a great inundation arose which flooded the place where the Buddha was living. But the Buddha caused the water to recede about him, and he walked up and down on a piece of dry land with water all around. The *Yin-kuo Ching*, *Taishō* 3. 649a, relates how the Buddha crossed the Nairañjana River by causing the water to split into two sides, leaving a dry path in the middle. Cf. W. N. BROWN, *The Indian and Christian Miracles of Walking on the Water* (Chicago, 1928), 18-29, in which the author lists other examples found in Buddhist literature of this miracle.

[39] Cf. WARE, *TP* 34. 174-78; PELLIOT, *BEFEO* 6. 392-93.

you to be your teacher.' After saying this, he left behind a magic bowl [for the king, so that the latter] might taste the law. Again, while Lao-chün was in the city of P'i-mo,[40] the place assumed a golden hue, and sent forth a supernatural light of nine colors which illuminated innumerable countries.[41] Thereupon Ch'ih-ling Chên-jên 赤靈眞人,[42] Chung-huang Chang-jên 中黃丈人, T'ai-i Chên-chün 太一眞君, Chiu-kung 九宮,[43] Liu-ting 六丁,[44] and Pa-kua Shên-chün 八卦神君,[45] Ch'ing-lung 青龍,[46] Pai-hu 白虎,[47] and San-hua Yü-nü 散化玉女,[48] arrived floating on the clouds. Lao-chün sat on a seven-jewelled throne, burnt the *pai-ho* 百和 incense,

[40] P'i-mo seems to be rather well-known. The *Sui Shu* 83.6a recorded that 500 li west of Khotan there was a P'i-mo temple where Lao-tzŭ was said to have converted the Hu into Buddhists. The *Wei Shu* 102.2b erroneously put the distance at 5 li, but the *Pei Shih* 97.3a mentioned 500 li. Hsüan-tsang passed by a city of P'i-mo in his travels, but he said it was 330 li east of Khotan. Cf. WATTERS, *On Yuan Chwang's travels in India* 2.298. I do not know whether the traveller and the compilers of the dynastic histories had the same city in mind. Cf. STEIN, Hsüan-tsang's notice of P'i-mo and Marco Polo's Pein, *TP* 7(1906).469-80; PELLIOT, *BEFEO* 8.517.

[41] I have not found any reference in Buddhist literature of the earth changing into such a color, and would welcome any information on this point. In the Buddhist tradition, the Buddha possessed a golden-hued body and was surrounded by a halo whose brightness exceeded that of a thousand suns. Cf. *Divyā.* 182. There are also numerous references to the Buddha emanating rays of light. In *Divyā.* 67-9, 138, 568, it is said that rays of light radiated from the Buddha's mouth when he smiled, illuminating all beings in heaven and hell. The *Expositor* (*Atthasālanī*, BUDDHAGHOSA's commentary on the *Dhammasaṅgani*) 1.17-18 has a description of these rays which consisted of six colors, indigo, golden, red, yellow, tawny, and dazzling. In the larger *Sukhāvatī-vyūha*, Ānanda expressed a wish to see Amitābha. The Buddha thereupon sent forth a ray of light from the palm of his hand which illuminated the entire world, so that all living creatures could see Amitābha. *SBE* 41.60-61.

The *Yu Lung Chuan* (*Tao Tsang* 555) 4.5a in describing Lao-tzŭ's conversion of the 81 countries in the west, follows the Buddhist tradition in making Lao-tzŭ emit the supernatural light of nine colors.

[42] *Taishō* 54.1266c has 赤松子, who was said to have been an ancient immortal. Cf. *Ch'ien Han Shu* 40.5a.

[43] Deities of the 九宮 or nine stars, which have control over floods, drought, calamity, and prosperity of the people. Cf. *T'ang Hui Yao* 唐會要 10B.21ab.

[44] These are the 六丁玉女. Cf. *Yün Chi Ch'i Ch'ien* 雲笈七籤 (*Tao Tsang* 681) 19.4a, 14b, 19a.

[45] *Op. cit.* 18.12b.

[46] Deities of the seven constellations in the east. Cf. LEGGE, *The Li Ki*, 1.92 note 1.

[47] *Ibid.* Deities of the seven constellations in the west.

[48] The Buddhists have 散花天女, who scatter flowers in honor of the Buddha.

and played *chün-t'ien* 鈞天 music.[49] The kings and queens of more than eighty countries came also to listen to him preach the law.[50] YIN Hsi was therefore left behind to serve as Buddha, and a bowl was also bequeathed to the city of P'i-mo. [Lao-chü] then ascended to heaven. Lao-chün also subdued a great poisonous dragon in the Ts'ung-ling.[51] He travelled all over the Five Indias, then miraculously made a jade throne for himself under a solitary tree [52] on Gṛdhrakūṭa. He preached the law of the Buddha to the king of the country and brought salvation to 2500 śramaṇas, to whom he taught the rules of monastic discipline.[53]

[49] I do not know what *pai-ho* incense and *chün-t'ien* music are.

[50] The list of countries is not given here, but it is found in the Tunhuang *Hua-hu-ching, Taishō* 54. 1266c-67a, and in the *Yu Lung Chuan* 4. 5b ff.

[51] The story of the Buddha subjugating a dragon may be found in a number of places. In the *Kên-pên° Yao-shih, Taishō* 24. 40abc, the Buddha and his companion Vajrapāṇi subdued the dragon Apalāla in N. W. India. In the *A-yü-wang-chuan, Taishō* 50. 102b, the subjugation of Apalāla took place in Udyāna. The *Fên Pieh Kung-tê Lun, Taishō* 25. 51c-52a, relates the subjugation of a dragon named Wu-yeh 無葉 in Magadha by the Buddha together with his disciples Ānanda, Guhyapāda, and Panthaka. The *Tsa-a-han* 雜阿含 (*Saṁyuktāgama*), *Taishō* 2. 165b, also has a short passage on the Buddha conquering Apalāla. In the *Kuan-fo San-mei-hai Ching, Taishō* 15. 679b-80a, the Buddha assisted by Vajrapāṇi with his thunderbolt subdued a dragon supported by five rakṣas.

[52] This is apparently an allusion to the bodhimaṇḍala of the Buddhists, the seat said to have arisen out of the ground under the bodhi tree when Śākyamuni attained enlightenment.

[53] *Pien Wei Lu, Taishō* 52. 761bc.

NOTES ON MARVAZĪ'S ACCOUNT ON CHINA

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In 1937 Dr. A. J. ARBERRY discovered the manuscript of the *Ṭabā'i' al-ḥayawān*, "The Natural Properties of Animals," by Sharaf al-Zamān Ṭāhir al-Marvazī (d. c. 1120). Five years later, in 1942, Professor V. MINORSKY of London University published an English translation of five chapters of Marvazī's work with commentary and the original Arabic text of those chapters that he had transcribed. The book was published as volume XXII of James G. Forlong Fund by the Royal Asiatic Society under the title *Sharaf Al-Zamān Ṭāhir Marvazī on China, the Turks and India.* The five chapters are on China, on the Turks, on India, on the Ethiopians and on Remote Countries and Islands. It is the chapter of China (MINORSKY's translation: pp. 13-29, commentary: pp. 61-92) that I intend to deal with in this short article.

Marvazī himself had never gone to the East. His account was largely based on the records of earlier Arabic geographers or what he had heard from his contemporaries returned from the East.[1] Since his sources are not homogeneous one should not be surprised at finding contradictions or confusions in his work. Although he lived in the latter part of the Northern Sung dynasty his account on China really extends throughout the T'ang and Northern Sung dynasties, i. e. from the seventh to the eleventh centuries. Nevertheless, Marvazī provides us with many valuable materials that are not found in Arabic travelogues hitherto made available. This chapter on China consists of forty-three sections; I shall discuss the contents of these sections in numerical sequence, and point out whether or not they are in agreement with Chinese sources. Some mistakes in the commentary are also pointed out. There are, however, a few important but puzzling passages, such as section 19 on the route to China and section 35 on the names of nine

[1] MINORSKY's Introduction 6-8.

tribes living in the northeastern part of China, which are not touched upon here. It is my hope that a more thorough study of this chapter will be made by some competent sinologues, both of the East and West, particularly Professor Paul PELLIOT with whom I had the pleasure of discussing this text during his brief visit to Cambridge.

In section 6, explaining why the Chinese did not allow strangers to enter their country, Marvazī says that it was due to the teaching of Manichaeism because Mani (should be the Manichaeans) "feared lest strangers should come to them and explain to them the futility of this faith and convert them from it." This statement, as well as sections 9 and 17, evidently exaggerates the position of Manichaeism in China. The translator points out this exaggeraton in his commentary (p. 65) but he also says that this supposition of Marvazī "indicates A. D. 843 as the terminus ante quem of the original report." This, however, is not necessary true. Manichaeism was flourishing in China as late as the Sung dynasty.[2] In the *Sung hui-yao kao* 宋會要稿 we find many imperial edicts persecuting the followers of this religion throughout the Northern and Southern Sung dynasties. In 1120 A. D., the year of Marvazī's death, it is said that in Wen-chou 溫州 alone there existed more than forty Manichaean temples.[3] Two more edicts were issued in the following year to arrest the believers who were specially numerous in the south-eastern provinces along the seacoast, and to burn all the Manichaean sutras.[4] It seems that Marvazī might have obtained his information about the Manichaeans from his friends who travelled to the East during his life time. Therefore the sources of information need not necessarily be dated before 843 A. D. In reviewing this book, Mr. H. A. R. GIBB also raises his objection to this remark [5] but no reason is given by him.

In section 7 Marvazī records that a merchant who had been to

[2] Ed. CHAVANNES et P. PELLIOT, Un traité manichéen retrouvé en Chine, JA eleventh series (1913). 292-314.

[3] *Sung hui-yao kao*, hsing-fa 刑法 2. 78a.

[4] Ibid. 2. 81b, 83a. I wish to thank my friend Mr. Lien-shêng YANG for the above references in *Sung hui-yao kao*.

[5] JRAS (1944). 94.

China says that the Chinese capital is called Y.njūr near which is another greater city called Kwfwā. The translator identifies Y.njūr with Lo-yang and Kwfwā with K'ai-fêng (p. 71). For the first identification he says, " The western capital was at that time Ho-nan-fu, which was then called Hsi-king, but during the period A. D. 907-23 Yung-chou [雍]. Our Y.njūr (*Yun-jū) is a perfect Arabic equivalent of Yung-chou and a close indication of the date at which the original authority visited China." In a note to this statement, he offers as evidence the fact that Prof. J. MULLIE quotes for him the *T'ai-p'ing huan-yü chi* 太平寰宇記. Nevertheless, Lo-yang was never called Yung-chou and the translator's identification is merely based on an erroneous interpretation of the text which Prof. MULLIE and he quote. The *Huan-yü chi*,[6] under Ho-nan-fu, reads: " In the first year of T'ien-pao [742 A. D.] Tung-tu 東都 was changed to Tung-ching 東京. The Liang dynasty of the Chu [family], in the early years of K'ai-p'ing period [907-10 A. D.] had their capital in Pien-chou 汴州. Hsi-ching 西京 [Ch'ang-an] was changed to Yung-chou whereas Tung-ching was changed to Hsi-ching. In the first year of T'ung-kuang [923 A. D.] of the Later T'ang dynasty Lo-yang became Tung-tu again." It is clear that in the Liang dynasty the Western Capital or Hsi-ching of the T'ang dynasty was changed to Yung-chou, an old name for that part of the country. At the same time Lo-yang, the former Eastern Capital, was changed to Hsi-ching or Western Capital because it was situated to the west of the new capital Pien-chou. The translator confuses the two Hsi-ching in this passage and so errs in saying that Lo-yang was once called Yung-chou during the Liang dynasty. If he had looked up the *Hsin wu-tai shih* 新五代史,[7] he would have known that Lo-yang is mentioned as the Western Capital of the Liang dynasty and immediately after it is listed the name Yung-chou. Mr. Lionel GILES in his review of this book[8] suggests that Y.njūr may refer to Yang-chou, yet he gives no definite proof. Albiruni [al-Bīrūnī] (d. 1049 A. D.), quoted in Abulfeda's (1273-1131 A. D.) work, also says that Yanjū is the

[6] 3. 5b (Chin-ling shu-chü ed.).
[7] 60. 17a.
[8] BSOS 11. 1. 233.

residence of the Chinese king.[9] It seems to me quite possible that Y.njūr in Marvazī corresponds to Yanjū in Albiruni, though their reference to Yang-chou as the residence of the king is groundless. If Y.njūr should be Yang-chou the identification of Kwfwā with K'ai-fêng would have to be reëxamined. Marvazī also records that Y.njūr " is crossed by a great river which divides it into two parts. The king with his retinue, army and attendants resides in one part, while in the other are the dwellings of the subjects and the merchants." According to the traditional plan of the Chinese capital city, the imperial palace is generally located in the northern part of the city with government offices clustered around it. On the other hand the markets are situated to the south.[10] Marvazī's account on the plan of the capital city seems to agree with this tradition.

In section 10 Marvazī quotes the merchant again by saying that some Chinese merchants go about the city selling goods and ride on carts that can go by themselves without any animals to draw. This is an interesting information that I have not so far found mentioned in any Chinese books, even in the section dealing with merchants' carts in the *Tung-ching mêng-hua lu* 東京夢華錄.[11] In section 15 Marvazī says that the horn of the rhinoceros " is the most precious freight for China because they make of it girdles, and the price of each such girdles reaches high sums amongst them." This statement is corroborated by many Chinese books. *Tu-yang tsa-pien* 杜陽雜編[12] says that Emperor Ching-tsung of the T'ang dynasty had a girdle made of the rhinoceros horn that shined brightly at night. CH'IEN Shu 錢俶 presented a belt of the rhinoceros horn to the Sung emperor.[13] Such a belt is also mentioned in several works of the Sung dynasty, such as *Ch'un-tu chi-wên* 春渚紀聞,[14] *Fêng-ch'uang hsiao-tu* 楓窗小牘,[15] *Hui-chu*

[9] H. YULE and H. CORDIER, *Cathay and the Way Thither* 1.256.

[10] Cf. *Kuwabara hakase kanreki kinen tōyōshi ronsō* 桑原博士還曆紀念東洋史論叢 94, 1241-2.

[11] 3.5b-7a (*Hsüeh-chin t'ao-yüan* ed.).

[12] 2.10a (Pei-hai ed.).

[13] *Sung-chih* 480.5a (T'ung-wên ed. This edition is used for all other dynastic histories).

[14] 2.13b (*Hsüeh-chin t'ao-yüan* ed.).

[15] 1.1b (*Pei-hai* ed.).

ch'ien-lu 揮麈前錄[16] and *Hsia-jih chi* 暇日記.[17] In *Ch'i-tan kuo chih* 契丹國志[18] it is said that a belt of rhinoceros horn is to be granted to the king of a tributary country while a golden or silver one is to be granted to his envoy. It is evident that during the T'ang and Sung dynasties and also among the Kitans, the rhinoceros was regarded as precious. In section 17 Marvazī records that all Chinese are of one faith, which is the faith of Mani, contrary to the Qitay and Uyghur, among whom there are other faiths, except Judaism. We know that besides Shamanism the Kitans also believed in Buddhism. There is also proof that the Uyghurs in Kao-ch'ang 高昌 believed in several religions including Manichaeism, Buddhism and probably Mazdaism.[19]

In section 22 we have a letter to the Sulṭān Maḥmūd of Ghazni from Emperor Shêng-tsung of the Liao dynasty. The letter is dated the year of the mouse which corresponds to 1024 A. D., but according to Marvazī the envoy reached Ghazni in 1027 A. D. The Arabs had sent an embassy to the Liao court as early as 924 A. D., during the time of T'ai-tsu.[20] Emperor Shêng-tsung who reigned from 983 to 1031 A. D. was very ambitious. He took every possible measure to cultivate friendship with distant countries and exhibited his military power in conquering neighboring state. Chang Chien 張儉 in an obituary eulogy 哀册文 summarizes this emperor's career: " [He] broadened the boundary [of his empire] and tranquillized the whole world. In the east [he] exhibited his martial prowess so that Ch'ên 辰 and Pien 卞 [= Korea] surrendered. In the west [he] spread his fame and culture so that Kua [-chou] 瓜 and Sha [-chou] 沙 presented precious things. The Ch'iang 羌 and Hun 渾 of Hsia 夏 dispatched missions and Wu 烏 and Shê 舍 [=India?] sent envoys." [21] In 1020 and again in 1021 A. D. the Arabs sent envoys to ask for the favor of

[16] 3. 10b (*Hsüeh-chin t'ao-yüan* ed.).

[17] Cited in *Shuo-fu* 說郛 4. 38b (Commercial Press ed.).

[18] 21. 3a (Sao-yeh shan-fang ed.).

[19] Cf. account of Wang Yen-tê translated by Chavannes and Pelliot, JA eleventh series (1913). 270-1.

[20] *Liao-shih* 70. 2b.

[21] *Liao-wên hsü-shih* 遼文續拾 1. 9a.

a marriage alliance and the daughter of an officer was made a princess to be married to the caliph.[22] It was probably from the Arabic ambassadors that Shêng-tsung heard of Maḥmūd's military achievements. Maḥmūd is said to have vowed to undertake every year an expedition against the Hindu idolators, and he did lead his army into India for more than ten times since 1001 A. D. In the winter of the year 1024 A. D. he set out for his most famous expedition into India.[23] There might have been Arabic ambassadors to the East again at this time, which was the reason why Shêng-tsung's letter praised Maḥmūd so heartily and the Yughur-Khan's letter also said, "We hear about his conquests over the lower countries (down) to the lands of Hind." No Chinese book has any account on this mission to Ghazni. Scholars who will hereafter compile the prose of the Liao dynasty will have to include this interesting letter preserved in translation. In *Tōkoku tsūgan* 東國通鑑,[24] an imperial edict sent by Shêng-tsung to the Korean king in 1030 A.D. is recorded. It says: "It must have been due to the obstruction of travel route that you have not sent envoys recently. Now the traitors of Po-hai[25] have all been besieged and have surrendered. You ought to send your ministers to our court. Certainly there will be no fear or worry." The phraseology and attitude expressed in this edict remind us of the letter to Maḥmūd. It seems that after the Liao dynasty the Chinese also knew something about Ghazni. This name appears among the Ta-shih 大食 countries in both *Chu-fan chih* 諸蕃志 and *Ling-wai tai-ta* 嶺外代答.[26] The heroic king of Ghazni mentioned in *Chu-fan chih* as feared by "Arabia and various countries of India 西天" may refer to Maḥmūd as Hirth and Rockhill suggest.[27] But their translation of the word hsi-t'ien as "the West" is inadequate. It is the word *hsi-t'ien* that further supports the identification of this king with Maḥmūd. Among the textiles that the Kitan envoy had

[22] *Liao-shih* 16.5b, 6a, 70.16b, 17a.

[23] Cf. *The Cambridge History of India* 3.13, 23. A slightly different date is given by Muḥammad Nāẓim in *The Life and Times of Sulṭān Maḥmūd of Ghazna* 115.

[24] Ch. 16 (2.419).

[25] This refers to the rebellion of Ta Yen-lin 大延琳, cf. *Liao-shih* 17.6b, 8b.

[26] F. Hirth and W. W. Rockhill, *Chau Ju-Kua* 138-40.

[27] Ibid. 139, note 2.

brought to Maḥmūd the word " zhunki " seems to be quite close to the word *chin-ch'i* 錦綺 in the list of gifts from the Liao emperor to foreign ambassadors.[28]

A letter from the Yughur-Khan Ilig to Maḥmūd is preserved in section 23. The translator identifies the Yughur-khan with the southern principality of Uyghur in the region of Kansu, which is generally known in Chinese history as the Uyghur of Kan-chou 甘. His reason is that the Kitan " attached more importance to the Kan-chou branch " (p. 78). As " indirect arguments in favor of this hypothesis," he also points out that a title one would expect to be used by the Uyghur khan of Khocho is not mentioned in the letter, while the two names which appeared therein seem to be quite similar to what are used by the Uyghur of Kan-chou. His arguments nevertheless are rather weak and I am inclined to believe that this Uyghur-khan refers to the khan of the northern branch of Uyghur in Khocho, known in Chinese history as the Uyghur of Hsi-chou 西, Ho-chou 和 or Kao-ch'ang. There are four grounds for this belief. In the first place both Shêng-tsung's and the khan's letters say that the ambassador of the Liao court will pass through the Uyghur territory on his way to and from Ghazni. If one goes westward from Lin-huang fu 臨潢府, the Upper Capital of the Liao dynasty, to Afghanistan, it would only be natural to go by way of Kao-ch'ang. It would be absurd if he should go southward to Kan-chou first and then turn to north-west again. In the second place section 19 says: " He who intends going to *Qocho, which is the city of the Yughur-khan, turns away towards the left after Sājū (*Sha-chou)." This information might have been obtained from the Kitan or Uyghur ambassador. It seems that the Yughur-khan whom Marvazī had in mind was none other than the khan of the Uyghur of Kao-ch'ang and it was possible that he did not even know of the existence of the southern branch of Uyghur. Thirdly, in the year 1124 A. D. when Yeh-lü Ta-shih 耶律大石 intended to advance westward to Arabia, he wrote to Pi-lo-ko 畢勒哥, the king of Uyghur, for permission to

[28] *Ch'i-tan kuo-chih* 21. 3b. According to *Sung hui-yao kao* (fan-i 蕃夷 1. 36b), it was after the first years of the eleventh century that the Kitan began to make good textiles.

pass through his territory.[29] Since the southern branch of Uyghur was already conquered by Hsi-hsia then, this Uyghur must have referred to that of Khocho. We also have evidence showing that in the year 1130 A. D. Ta-shih was actually in Khocho.[30] It is clear that Khocho, not Kan-chou, was the place that the Liao people had to pass through in order to go to the West. Later travellers of the Yüan dynasty such as YEH-LÜ Ch'u-ts'ai 耶律楚材, CH'IU Ch'ang-ch'un 邱長春 and CH'ANG Tê 常德 all took more or less the same route.[31] Fourthly, according to the Shu-kuo piao 屬國表 or tables of tributary nations in the *Liao-shih*,[32] the embassy of the Uyghur of Khocho frequented the Kitan court while the Uyghur of Kan-chou, on the other hand, were not at all times on friendly terms with the Kitan. In the *Sung hui-yao kao*, a letter from the khan of the Uyghur of Kan-chou dated 1015 A. D. is preserved. He calls himself nephew and regards the Sung emperor as his maternal uncle. He also promises that he will never dare to betray the emperor and that he has severed diplomatic relations with the Kitan. In the next year again came a letter saying that the Kitan had sent more troops to Sha-chou. He suspects the Kitan's intention and reiterates his severance of relations with them.[33] In 1023, 1024, 1025, 1027 and 1028 A. D. the Uyghur of Kan-chou sent tributaries to the Sung court.[34] The evidence seems to indicate that the Uyghur of Khocho were allies of the Kitan while the Uyghur of Kan-chou were on good terms with the Sung court. In the year 1008 A. D., Shêng-tsung sent HSIAO T'u-yü 蕭圖玉 to attack the Uyghur of Kan-chou. The khan Yeh-la-li 耶剌里 surrendered but revolted again soon after.[35] In 1026 A. D. HSIAO Hui 蕭惠 was sent to conquer them. Hsi-hsia also sent troops to help the Kitan. This expedition, however, ended in failure.[36] In 1028 A. D. the Uyghur of Kan-chou were finally conquered by Hsi-hsia.[37] At that time relations between Liao and Hsi-hsia were very smooth. In 1029 A. D. the king of Hsi-hsia

[29] Cf. E. BRETSCHNEIDER, *Medieval Researches* 1. 214. For the date cf. LIANG Yüan-tung 梁園東, *Hsi-liao shih* 西遼史 35.

[30] *Hsi-liao shih* 39.

[31] Cf. BRETSCHNEIDER 1. 16, 24, 65.

[32] *Liao-shih* 70.

[33] Fan-i 4. 6a-b. Also cf. *Sung-shih* 490. 12b.

[34] Fan-i 4. 8b-9a.

[35] *Liao-shih* 14. 8a, 93. 5b.

[36] *Liao-shih* 93. 1b.

[37] *Sung-shih* 485. 12a.

asked that a Liao princess be married to his son and the request was granted. It seemed that during the period 1023 to 1027 A. D. relations between Liao and the Uyghur of Kan-chou were so bad that one could hardly expect Shêng-tsung to permit the marriage of a princess to the Uyghur Khan, or Uyghur to allow the Kitan envoy to pass through their territory. If the Uyghur of Kan-chou had been allied with Liao by matrimony in the year 1027 A. D., as the letter says, and Hsi-hsia conquered them in 1028 A. D., it would be still more difficult to explain why Shêng-tsung granted the princess to Hsi-hsia so willingly. It is on these grounds that I think Ilig Khan is the khan of the Uyghur of Khocho, not of Kan-chou.

In section 26 Marvazī records that in Khān-fū at sunset the drum is beaten as a signal for the Chinese and foreign merchants to retire to their own quarters. According to the *T'ang hui-yao* 唐會要,[38] in cities the drum is beaten two hundred times at noontime for the people to gather in the market. Before sunset the gong is struck three hundred times and the people then leave the market. Marvazī's account seems to be a somewhat modified form of this custom. The tithe levied on merchandise is recorded in this section and it agrees with the statement in the *Sung hui-yao kao*.[39] In section 27 Marvazī again says that " Their custom is to levy from the merchants who come to this city three-tenths of whatever they have with them." This agrees roughly with *P'ing-chou k'o-t'an* 萍洲可談 which says that ten percent of the fine merchandise and thirty percent of coarse merchandise are to be submitted to the government.[40] It seems that the rates of duty varied in accordance with different periods and ports. Marvazī gives a list of goods imported to China, among which dried fruits such as dates and raisins are given. The dates from the West, particularly Basra, are recorded in Chinese books.[41] In section 27 Marvazī tells about the system of storage of goods for six months by the Chinese government before they are allowed to be sold. This custom is also described by Sulayman but so far it has not been found in

[38] 86. 18a (Chiang-su shu-chü ed.).
[39] Chih-kuan 職官 44. 1b.
[40] 2. 1a (*Shou-shan-ko ts'ung-shu* ed.).
[41] *Ling-piao lu-i* 嶺表錄異 2. 4b (*Jung-yüan ts'ung-shu* ed.), *Chau Ju-Kua* 137-8.

any Chinese record. The eunuch clerk is mentioned in this section. It is true that during the T'ang and Sung dynasties eunuchs were sent by the emperor to take charge of and supervise the foreign trade in the south.[42] Marvazī also says that the Chinese "purchase all with money." This seems to be supported by the information that the Persian and Arabic merchants treasured Chinese coins and that their goods could only be bought by money.[43]

In section 28 Marvazī says: "If a Muslim dies in their country and has no heirs, his property is taken and placed in the king's treasury, . . . And they wait three years and three months and three days and, if his successor comes before the expiration of the term, the property is handed over to him." We know that before the year 817 A. D. the time limit for claiming the property of a dead merchant was only three months. After that year it was changed to an indefinite period.[44] It is not known at what time this custom recorded by Marvazī was in practice. Marvazī says in this section that the Chinese women outdo men in crafts and commerce. Presumably he refers to the women in Kuang-chou. It seems to agree with a statement in *P'ing-chou k'o-t'an* that in Kuang-chou women are stronger than men.[45] In section 31 Marvazī says that when the rain was scarce the king would send his men "to the idol-temples to seize the shamans, to imprison them, to put them in irons and to threaten them with death if it does not rain, and keep using them roughly till it does rain." In ancient China it was a custom to burn a witch or expose her to the sun to bring on rain.[46] There is also a story in *Chü-t'an lu* 劇談錄 that during the period between 841 and 846 A. D. a magistrate beat a witch and threw her into water, thus rain was caused.[47] Nevertheless it is not known whether this was an usual practice during the T'ang and Sung dynasties.

In section 32 Marvazī says that in the capital when the sun is

[42] Fujita Toyohachi 藤田豐八, *Tōzai kōshōshi no kenkyū, nankai hen* 東西交涉史の研究、南海篇, 289-91, 345-7.

[43] *Sung hui-yao kao*, hsing-fa 2. 144b.

[44] *Ch'ang-li hsien-shêng chi* 昌黎先生集 33. 4b (SPTK ed.).

[45] 2. 4b.

[46] J. Legge, *The Ch'un-ts'ew* part 1. 180, S. Couvreur, *Li Ki* 1. 261.

[47] 1. 19a (*Hsüeh-chin t'ao-yüan* ed.).

about to set the drums in the palace are beaten. Then everyone hurries to his house. The government agents disperse themselves in the town wards and on the highways. Anyone out of his house will be beheaded. This account is partly supported by Chinese sources. In the T'ang dynasty, at daybreak the drums are beaten in the palace and then along the streets so that the whole city can hear. After the drums are beaten four hundred times the gates of the city are opened. Before sunset they also start to beat the drums in the palace and then along the streets. After beating the drums four hundred times the city gates are closed. After the closing the drums are again beaten, now for six hundred times. Then the gates of the enclosed wards are closed. No one is allowed to go out of the enclosed wards before the next morning when the drums are beaten again. It is permitted to walk within the enclosed wards. Those who violate the law of going out of the enclosed wards at night, unless with good reason, are punished with twenty strokes.[48] Marvazī does not seem to know that one can walk within the enclosed wards; perhaps he did not hear of that. The light punishment of twenty strokes is also erroneously reported to him as capital punishment. The system of enclosed wards was still kept in the first quarter of the eleventh century but after that it gradually disappeared, due to the development of great cities.[49] The custom of beating the drums was abandoned in the period of Hsi-ning (1068-77 A. D.).[50] The *Sung hsing-t'ung* 宋刑統, following the T'ang code closely, also has the item of violating the law by going out of the enclosed ward, yet judging from the abandonment of the enclosed ward system and the prosperity of various shops at night,[51] the law in the *Hsing-t'ung* must have existed in name only, never being put into practice. In section 37 Marvazī says that a criminal is not killed before he has signed a document saying that he has indeed committed that crime. This agrees with the law code of both the T'ang and Sung dynasties.[52]

[48] *Tōryō shūi* 唐令拾遺 360, *T'ang-lü su-i* 唐律疏議 26.13a (SPTK ed.).
[49] *Kuwabara*° 103-110.
[50] Ibid. 114-5.
[51] *Tung-ching mêng-hua lu* 2.3b-4b, 6a, 7a, 8a.
[52] *T'ang-lü su-i* 29.10b, *Sung hsing-t'ung* 29.12b.

THE PREPARATION OF FERMENTS AND WINES

BY CHIA SSŬ-HSIEH OF THE LATER WEI DYNASTY

TRANSLATED BY

HUANG TZŬ-CH'ING 黃子卿 AND CHAO YÜN-TS'UNG[1] 趙雲從

WITH AN INTRODUCTION BY

TENNEY L. DAVIS

The present account of the preparation of ferments and wines is a portion of the sixth century work *Ch'i min yao shu* 齊民要術, Important Arts of the Folk of Ch'i,[2] by CHIA Ssŭ-hsieh 賈思勰. The translation has been made from a version printed photographically by The Commercial Press Ltd., Shanghai, from the Ming manuscript of the Chün-pi Lou library of the Têng family of Shang-yüan 上元鄧氏群碧樓 (Nanking). The author is believed to have been governor of Kao-yang 高陽, but no details concerning him are known. Since the title suggests that the author was a native of Ch'i, and since the histories (Wei shu 72 and Pei shih 47) mention two men from Ch'i chün who lived in the first quarter of the sixth century A. D., namely CHIA Ssŭ-po 伯 and his younger brother CHIA Ssŭ-t'ung 同, this author has been assigned to the T'o-pa Wei dynasty. Since there seems to be no reason to quarrel with this deduction, we conclude that the treatise describes the recipes and common practices of about 500 A. D.

CHIA Ssŭ-hsieh describes the making of wine from rice and from millet through the agency of molds by a process similar to that which is used in China and Japan at the present time.[3] The process is especially interesting because it is different in principle from any which was in common use, so far as we have been able to

[1] [Revised by J. R. W. with consent of T. L. D.]

[2] [This tempting translation of the title is made, with reservations, because of the traditional authorship. The normal rendering would be "Important Arts of the People."]

[3] See footnote 8.

make out, in ancient Egypt, in Mesopotamia, or in the Graeco-Roman world.

The making of wines from fruit juices is simple and straightforward. Indeed it is practically inevitable. It occurs with extremely little guidance from the wine-maker. Fruit juices contain fermentable sugar which is converted to alcohol easily by the action of yeast. Yeasts are always found, lying in wait as it were, on the skins of fruits, in the dust of orchards and gardens, and on vegetation. The juices then, expressed from the fruit, are apt for fermentation, and form wine of a sort spontaneously unless something is done to prevent it. The vintner is able to control to some extent the quality of his product, but he is in the position—the primitive vintner at least—of taking advantage of a natural process, not of contriving the process for himself.

The making of alcoholic liquor from cereal is a much more sophisticated matter. It does not happen in nature in any manner to thrust itself upon the attention. It is not so definite and so obvious as to be unavoidable. Man had observed natural phenomena and had made considerable progress in his understanding of them before he was able to manufacture beer or to prepare alcoholic drink from starchy materials. It is astonishing that primitive man ever did discover how to do it.

Starch does not undergo the alcoholic fermentation, but requires first to be converted to a sugar which is fermentable by yeast. The necessary hydrolysis can be accomplished by the action of mineral acids or by the action of certain ferments. The former of these methods is a chemical one, applied only in recent modern times to the manufacture of such products as corn syrup and potato molasses and, occasionally, to the preparation of grain mashes for the production of industrial alcohol. It has no ancient history and no interest for the present discussion. The biochemical methods, however, which use the ferments of the saliva, of malt, and of certain molds, have long been employed for the preparation of alcoholic beverages.

The fact that saliva (containing the enzyme, ptyalin) converts starch into sweet-tasting material is discoverable by anyone who has retained bread, crackers, potato, or other starchy food in the

mouth for a short time after it has been chewed. That the sweet-tasting product is fermentable was evidently discovered at an early time, for certain primitive people prepare alcoholic drink by a process in which the women of the tribe chew the starchy material until it is thoroughly mixed with saliva and then expel it into vessels where the conversion of the starch continues and where the alcoholic fermentation of the resulting sugars occurs under the influence of the wild yeasts which are always present.

Beer has been made from cereals by the use of malt since the earliest historical times. The fact that the sprouting of grain is accompanied by the conversion of part of its starch to a sugar (maltose) might have been discovered easily by the sense of taste. But the fact that the maltose is fermentable by yeast, and the further facts that the sprouting grain has the property (the enzyme, diastase) of converting to sugar the starch of other unsprouted grain, and that it retains this property even after being dried and perhaps heated to stop its germination—these are facts which, one might think, would not be discovered so easily. Their early application in the brewer's art indicates that keen observers lived long ago and as sagacious appliers of knowledge as any we can hope to find at present.

The art of brewing beer from malt is supposed to have been introduced into Egypt by the god, Osiris. PARTINGTON[4] cites many references to beer in the papyri. Beer from red barley is mentioned in the fourth dynasty, and several other varieties in the Book of the Dead. The Ebers papyrus mentions beer many times and in many forms, as bitter, fermenting, foaming, sweet, etc. The Pyramid texts (fifth and sixth dynasties) refer to dark beer, iron beer, and *hes* beer. Queen Hatshepsut sent a present of Egyptian beer to a foreign prince. All classes and ages of the ancient Egyptians drank beer, the king had a brewery, but in Alexandria the drinking of beer was generally limited to the lower classes. The process of making beer in the Old Kingdom is represented by a wall picture in the sacrificial chamber of Achet-

[4] James R. PARTINGTON, *Origins and Development of Applied Chemistry*, London, New York, and Toronto, 1935, pp. 196-197.

hetep-her,[5] and is illustrated by wooden models which still exist. The moistened grain was allowed to sprout, ground in a mortar, worked into lumps with water and leaven, and baked superficially to make a sort of bread, the inside of the cakes being raw. Similar "bread" is used at present in Egypt for making *busa*. The cakes consisted of malt and yeast; the browned crust gave color to the finished beer, and the yeast in the raw interior was still alive and uninjured by the baking. The bread was broken up with water, allowed to ferment in tubs for about a day, and the beer was then strained from it and kept in pitched jars sealed with Nile mud.

The early Sumerians were acquainted with beer which was made from barley, emmer (Triticum diococcum), and other grains. Recipes exist from Lugalanda's time (2630 B. C.) which call for grain, beer bread as in Egypt, and *buqlu* (perhaps malt). This last ingredient is perhaps also indicated in Hittite texts. One receipt to make 100 *sila* (40 liters) of beer required 72 *sila* of emmer without husk, 12 *sila* of beer bread, and 96 *sila* of *buqlu*. The beer was kept in leather bags or in clay barrels or jars, and was strained to remove sediment and floating grains from it or was drunk through straws. The method of drinking through straws is pictured on early Sumerian cylinders at Ur, on a Hittite cylinder of 2000 B. C., and on an Egyptian stele of 1400 B. C.[6]

Babylonian beer was brewed in the homes, and in breweries where the materials were supplied by the customer. The brewer owned the manufacturing equipment, the vats, fermenting tubs, barrels, jars, the brewer's furnace (boiler or malt kiln?), and so forth. There were laws which fixed the amount of finished product which he was obliged to supply from the raw material which was furnished to him. Bar maids served beer in public houses, and it was permitted that they should be ducked in water if they sold adulterated beer. A barmaid, Ku Bau, became a queen in the old period (3000 B. C.).[7]

[5] This picture is reproduced in Albert NEUBURGER, *The Technical Arts and Sciences of the Ancients*, trans. BROSE, New York, 1930, p. 101.

[6] Partington, *op. cit.*, p. 304.

[7] *Ibid.*, p. 305.

For the making of rice wine, as the art is practiced at present [8] in China, cooked or steamed rice is taken. The steaming has opened out the grains and made them readily pervious to moisture. The bulky, cooked material consists in large part of water and is ready for conversion first to an aqueous solution of sugar and afterwards to the vinous, aqueous solution of alcohol. Pieces of ferment cake are broken up by hand to a coarse meal, and this is mixed by hand with the cooked rice.[9] The mixture is allowed to stand in a cool place in a capacious vessel, perhaps with a cloth cover over it. After 24 hours a growth of mold is evident on its surface, and after 48 hours it has begun to liquify. The individual grains of rice disappear, the whole mass becomes liquid, assuming a pleasant, winey odor, and bubbles are evolved as the alcoholic fermentation sets in. A second portion of cooked rice is added. This liquifies in its turn, increasing the bulk of the fermenting mass, and a third portion of cooked rice is added, perhaps a fourth to fill the vessel and to take full advantage of the strength of the ferment. After the fermentation is over, the liquid is strained, the sediment is removed, and the wine is ready for storage or for use.

Ferment cakes today are apparently made, as CHIA Ssŭ-hsieh described them, from grain in three states, raw, steamed, and roasted. The roasted grain gives more or less color to the wine and affects its flavor; the steamed grain supplies a favorable medium for the growth of the mold, for converting starch to sugar, and for the growth of the yeast, for converting the sugar to alcohol, with which the ferment cake must be innoculated; and the raw grain improves the drying of the ferment cake. The materials are mixed with the requisite microörganisms, mold and yeast, perhaps with ferment from an earlier fermentation. The mass is incubated, or

[8] This account of the making of wine as it is practiced at present in China is based upon the oral information of CHAO Yün-ts'ung who has many times seen the process carried out in the establishment of one of his relatives. We have also repeated parts of the process in the laboratory, using a ferment cake purchased in this country from a Chinese grocer. The cake weighed about two pounds and a half.

[9] Samuel C. PRESCOTT and Cecil G. DUNN, *Industrial Microbiology*, New York and London, 1940, p. 107, state that in making *sake* (yellow rice wine) the Japanese use a *kōji* (ferment) which is made from steamed rice innoculated with *Aspergillus oryzae*.

merely kept cool and moist, until the mold and yeast have made a luxuriant growth throughout its mass. Then it is mixed with herbs or other material to give a particular flavor to the wine, made into cakes, and dried.

CHIA Ssŭ-hsieh's treatise describes the preparation of ferment cakes from wheat and from rye both with and without the addition of herbs, and, by the use of this ferment, the preparation of wine from rice, from glutinous rice, and from millet. Certain sacrifices and magic ritual constitute part of the process of preparing the ferment. Otherwise the description is perfectly clear as far as it goes, but it does not make evident how or when the molds and yeasts are introduced into the process. The author, of course, was not acquainted with the spores of molds, with the cells of yeast, or even with the existence of microörganisms and with the means by which they are propagated and multiplied. He knew only that somehow, in the course of his process, the preparations acquired the marvelous property of inducing a fermentation. Indeed they probably acquired it, and the organisms, from the random infections which existed in the huts where the ferment cakes were allowed to season, where images were set up to which sacrifices of ham and wine were offered. The author apparently suspected that the marvelous efficacy of the ferments was in some way derived from these huts, but he seems to have doubted the power of the sacrifices. He says, "It has been found that there is not much difference whether the sacrifice with ham and wine is offered or not, therefore the practice is diminishing." He appears to have thought it more important that a cat should be kept in the ferment hut for several days before it was used. Practically, as an experimentalist, he was probably right.

Translation

[4a9] The Preparation of Superior Ferments and Wines by Chia Ssŭ-hsieh of the Later Wei Dynasty [10]

Preparation of [Superior] Ferments from Three *Hu* 斛 [11] of Wheat

One *hu* each of steamed, of roasted, and of raw wheat are taken. The roasting of the wheat should be stopped at the point when the wheat turns yellow, and [care must be taken] not to char it. The raw wheat should be selected from the finest kinds. All of the three kinds of wheat are ground separately to a fine state. After the grinding they are mixed together.

Before sunrise on the first [12] day of the seventh month [roughly, August], a boy who puts on black [? blue] and faces *sha ti* 殺地 [the west],[13] is sent to draw twenty *hu* of water. Nobody else is allowed to touch this water. If this is too much water, the unused portion may be discarded but it must not be used by anyone. During the mixing of the ferment and the water, the workers are to face the west. Only the very strong are to be employed for this mixing. For the caking of the ferment male children are to be employed, and they too will face west. No dirty person is to be employed, and no women are allowed near the caking. On the day in question the workers will utterly avoid the bedroom.

[The ferment is made] in a hut which is roofed with thatch [straw], not with tiles.[14] The earth must be clean [i. e., firmly

[10] The later Wei or Northern Wei dynasty was the dynasty of T'o-pa Tartars which ruled North China from the year 386-534 A. D.

This is a translation of section 64 from Chia Ssŭ-hsieh's *Ch'i min yao shu* 7, as edited in *Ssŭ pu pei yao* and *Ssŭ pu ts'ung k'an*. Refs. to latter.

[11] About 50 liters according to present Chinese standards. At present 1 *hu* equals 5 *tou* 斗 equals 50 *shêng* 升 = 500 *ko* 合, but the term *hu* is not common; the term *shih* 石 (stone), signifying 2 *hu* at present, is much commoner. One *shêng* at present equals 1.03546888 liters—or 1 liter for the purposes of the present translation, 1 *tou* equals 10 liters, and 1 *shih* (stone) equals 100 liters (about a quarter of a barrel). There is evidence, pointed out below, that 1 *hu* in the present treatise equals 20 *tou*, that is, about 200 liters or half a barrelful.

[12] Here the text has 甲寅, at 5b3 it reads 上辰, and at 6b10 上寅 (also 8a3).

[13] In classical Chinese, east signifies birth and west signifies death. *Sha ti* means the place of death and thus the west.

[14] Because tiles conduct more heat than straw.

packed], and no [loose] dirt is allowed to appear. There must be no damp spots. It is then divided into squares with footpaths so that four alleys are formed. Images are made out of the ferment and are placed in the alleys. Some of the images are set to be the kings of the ferment, and there are five kings. The cakes of ferment are then arranged on the earth side by side along the footpaths. After that, one person from the owner's family is chosen to be the master of ceremonies. Neither servant nor guest may serve as the master. The kings [of the ferment] are given wine and ham [15] in the following manner: The kings' hands are moistened and made into bowls. Wine, ham, broth and pastry are put into these bowls.

The master of ceremony then reads the sacrificial speech three times. Everyone kneels twice to the house [straw hut]. The wooden door is closed and sealed with mud to prevent the ingress of wind. After seven days the door is opened, the cakes of ferment turned over, and the door again sealed with mud. After another seven days, the cakes are piled up and the door is again sealed to prevent the wind from coming in. After another seven days the cakes are taken out [from the hut] and are put into an earthen jar the mouth of which is sealed with a cover and mud. After another seven days a hole is made in each of the cakes and they are strung together. The cakes [in strings] are exposed to the sunlight. After they are perfectly dried, they are then taken in. A cake has a size of about two and a half *ts'un* 寸 [16] (inch) in diameter and nine-tenths of a *ts'un* in thickness.

[5a10] Prayer for the Ferment: (Omitted)

[6a2] Wine-Making

The ferment cakes are exposed to the sunlight for about five days. When the sun has passed three times, they are then brushed with a broom until they are absolutely clean. If the sunlight happens to be good, three days of exposure will be enough. After that, the cakes are crushed into small pieces and are dried again in the

[15] [*Fu* 脯 is any dried meat.]

[16] A *ts'un*, one-tenth of a foot, is a little longer than an inch.

sunlight for another day on a canvas over the kitchen roof. They must not be soiled by dust.

One *tou* of the ferment is measured out and ground finely in a mortar. In soaking the ferment one *tou* and five *shêng* of water will be used. After the soaking of the ferment for three days, it will look like the boiling of fish-eyes. As for the grain 米 which is to be added progressively [17] [to the mixture], let it be the best. It may be washed as many as twenty times. The *fan* 飯 [steamed grain] for wine is not to be eaten by human beings or dogs. River water is always preferable for washing the grain, for cooking, and for washing the utensils used in wine-making.

[6a10] In making wine from Italian Millet,[18] for every *tou* of ferment, twenty-one *tou* of the millet are used. First, three *tou* of the millet are [added]; after standing overnight five *tou* of millet; after standing for another night ten *tou* of millet; after standing for a third night three *tou* of millet.

It is desirable to have the fan [cooked millet] for wine cooked mildly. The cooking is carried out in the same manner as the cooking of edible *fan*. After it [the *fan*] is perfectly cold, it is then added to the fermentation mixture.

[6b4] In the making of wine from glutinous rice, for every *tou* of ferment one *shih* and eight *tou* of grain is used. However, the fermentation here is completed in three stages [the one just described required four]. For the method of cooking the *fan*, once it is half-cooked [steamed] it must not be re-cooked. As for the treatment of the half-cooked rice, place it in an earthen jar, and flood it with pots of boiling water until it is just covered. (The above is the method of YÜAN P'u-shê's 元僕射 family).[19]

[6b8] Preparation of Superior Ferment, Second Process

The three kinds of wheat, steamed, roasted, and raw are used in equal amounts in the same manner as before. But, the require-

[17] [It is clear from the present document that this word *t'ou* 酸 (it looks like an equivalent of *ch'ou* 酎) denotes the fermentation of grain by steps; i.e., the batch of grain is fermented progressively, not *en masse*.]

[18] *Shu shu* 秫黍 is the glutinous variety of Setarian italica or panicled millet. According to Prof. W. C. WU of the Biology Department, National Southwest Associated University, *shu shu* corresponds to our modern Italian millet.

[19] This appears to be a method of preparing mildly cooked *fan*.

ments of making the footpaths, or offering sacrifice with wine, ham, broth, and pastry, for worshipping the kings of ferment, and of hand-caking by male children, are all omitted.

Prepare things as before. The three kinds of wheat are combined after the mixture is finely ground. On the first day of the seventh month [August] one makes the ferment. It is wetted until hard and kneaded thoroughly. Soft cakes of it are then made in round iron molds, five *ts'un* in diameter and one and a half *ts'un* thick, and laid on a flat board. A strong man is employed to trample the cakes thoroughly. With a stick one makes a hole [in the cakes]. The earth is swept until clean. The door of the house is opened to the east. The windows and door are closed and all the cracks and holes are sealed with mud to keep out drafts. After a period of seven days, the cakes are turned over. After another seven days, they are piled up. The door is sealed with mud every time. After another seven days, the cakes are exposed to the sunlight for drying. The ferment is then formed.

The ferment can be stored in any cabin; the storage in an earthen jar [as in the previous method] is unnecessary. If kept in an earthen jar, it will turn black [because of the growth of moulds]; i. e., all around the hole there will be black rot.

One can make at one time any desired quantity of ferment, but the proportion of equal amounts of the three kinds of wheat must be maintained. One is not restricted by the three *shih* limit. For one *tou* of this ferment, three *shih* of grain can be used. If, however, a *tou* of ordinary ferment is employed, only six *tou* of grain will be used. The economy of the present method is far superior. Both the charred-wheat ferment of the seventh day in the seventh month and the spring-wine ferment belong to the class of ordinary ferment.

[7ba] Preparation of *Shu* 黍 (Millet) Wine with the Superior Ferment

The ferment is crushed into small pieces and is dried in the sunlight. For one *tou* of the ferment nine *tou*-measures of water and three *shih* of millet are used. If one wishes to make larger

quantities than this, he can increase the materials according to the same proportion. Earthen jars of any size may be employed [as the containing vessels].

Wines which are fermented in the season of mulberry-fall [early winter], can be kept throughout the year. To begin with, one *shih* of the millet is used. Then [in consecutive stages], a five-*tou* portion, a four-*tou* portion, a three-*tou* portion is added. The addition is made when the millet [in the mixture] is about used up. But the energy of the fermentation should not be allowed to die out [before continuing it with additional millet].

The wine is ready when its smell is right and the evolution of gas ceases. If, however, a correct smell is indicated but the evolution of gas is still going on, it will mean that the energy of the ferment is not yet exhausted. In such a case, millet must be added, otherwise the flavor of the resulting wine will be bitter and thin. Those who understand this trick will be able to turn out wines with a light bouquet.

This ferment is really better than ordinary ferment. However, people who use it for the first time usually suffer from getting a thin wine. Why? Because, they still think that this ferment behaves the same as the ordinary ferments. It is likely that a thin wine results because the millet used is insufficient and the energy of the ferment is not entirely consumed.

[The process] must be observed by neither chicken nor dog. The reason for choosing particularly mulberry-fall season to start the work lies in the fact that the cooked millet must be well chilled.

[8a3] Preparation of Another Superior Ferment, [Third Process]

The work is started on the first day of the seventh month. The materials must not be seen by or given to any chicken or dog. Any amount of wheat chosen for the purpose is equally divided into three portions. One portion is steamed; another roasted; and one portion, the best, is kept raw. They are ground finely and separately, and are mixed together. The mixture is soaked in water (1½ *tou* to 10 *tou* [of meal]) to make a stiff dough. The dough is then kneaded thoroughly with both hands and feet. Male

children are then employed to make the dough into cakes of three *ts'un* in diameter and two *ts'un* in thickness.

[The place for putting the cakes] must be a western room with the door open to the east. The earth must be swept until clean [free from loose material]. The ferment [cakes] are arranged on this earth with the formation of two footpaths crossing each other for the passage of a man. At each corner [of the room], an image is erected to be the slave of the ferment. After that, the door is sealed with mud to prevent any draft. After seven days the door is opened, the ferment turned over, and the door sealed again. After another seven days they are piled up and the door again sealed. After a third seven days the cakes are taken out. In the preparation of wine, the ferment is first treated as usual, but it is better that it be finely crushed.

[8b2] Preparation of Wine [with this Superior Ferment]

Two *tou* of the excellent ferment, eight *tou* of water, and one *hu* of millet are taken. At first, five *tou* of the millet are put in. The millet must be washed with water fifty or sixty times. For the second and the third stages seven *tou* and eight *tou* of the millet are used respectively. Thus, a sum of two *shih* of the millet will have been used. After that, one will judge by his own opinion [to determine whether more grain is required]. But a little excess of millet is necessary. An inferior wine will be produced if there is too little millet. The method of warming and cooling [of the fermentation mixture] resembles entirely that of the ordinary fermentations. The greatest care is required.

[8b7] Reparation of Thick Wine from Rice with the Superior Ferment

The fermentation is carried out in the months of spring. For every *tou* of dried ferment, seven *tou* of water, and two *shih* and four *tou* of rice are used. The ferment is soaked. When [the infusion] develops into a fish-eye broth, eight *tou* of the rice is washed thoroughly and steamed to form a *fan*. The *fan* is cooled by spreading it out until it is very cold. The residue of the ferment

is then strained off with a woolen sac and the juice is strained again into an earthen jar with silk cloth. Then the *fan* is added. After the rice dissolves, another eight-*tou* portion of the rice is added. After dissolving, the last eight-*tou* portion is added. Altogether, the fermentation will be finished in three stages. If the wine still tastes bitter, add another two *tou*. The resulting [thick wine] is called *ho p'ei* 合醅 [unfiltered wine] and one may drink it right away.

[9a3] The Preparation of Another Superior Ferment, [Fourth Process]

The time before the second ten days of the seventh month is the best period for starting the work on preparation of the ferment. The use of the first day [of the seventh month] is not required. A ferment which is made in a time later than the twentieth day [of that month] will possess a weaker and weaker strength. Any room can be used to house the cakes, and a straw hut with the door open to the east is unnecessary.

Generally, equal portions of three kinds of rye, the steamed, the roasted, and the raw, are mixed together, the steamed rye being dried [beforehand] in the sunlight. The mixture is hulled in a mortar with a pestle, and winnowed thoroughly. The finer portion is then ground and sieved. The product is ground again; the finer the flour obtained, the better the result.

[In the meantime, a certain amount of] *hu yeh* 胡葉 (coriander?, pepper leaves?, Chinese colza?) is crushed; the product is boiled three times; the broth thus obtained is cooled; and the clear portion of the liquid therefrom is decanted. The flour of the ferment is wetted sufficiently with this liquid to form a dough. Ordinarily, a slightly stiff dough is desirable, and it should not be too wet. The kneading of the dough will be considered complete when it is capable of forming cakes; beating a thousand times is unnecessary.

Cakes of the dough are shaped with the hands into a size similar to that of the [ordinary] steamed cakes and are worked so that they become shining with moisture. A hole is pierced. Adult men and women all may do the caking work. The employment of only boys is not required.

A cat is kept in the ferment hut several days beforehand: all of the rat-holes plugged up; and the ferment cakes are arranged on this earth in rows without pushing them together too closely. Two footpaths crossing each other and passing through the central part of the hut are reserved so that a man can walk through easily. Five ferment images are erected to be the kings of the ferment on the four sides [of the hut] and at the center. The one image at the center has its face facing southward; those on the four sides are placed facing the center of the hut. It has been found that there is not much difference whether a sacrifice with ham and wine is offered or not, therefore the practice is diminishing. After the ferment cakes have been arranged, the door is closed and sealed tightly with mud to allow no leakage of air.

After seven days, the door is opened, the ferment cakes turned over in their original places, and the door again closed with mud as before. After another seven days they are piled up. If only three *shih* of rye have been used to make the ferment, the cakes would be piled up in one heap. If more than this amount was employed, two heaps would be necessary. The door is closed and sealed with mud as before. After another seven days, the ferment cakes are strung together on hemp rope, fifty cakes being in one string. These are hung inside a room the door of which is left open; but no sunlight is admitted into the room. After five days, the cakes are moved to the outside and are hung there for receiving sunlight in the day time, and frost and dew at night. They do not have to be covered even for long periods of standing, but care is taken not to let the rain wet them. These ferment cakes, after three years of storage, will become especially good.

[10a5] Preparation of Wine with the Superior Ferment

The ferment cakes are brushed until clean. Any soiled part is scraped off with a knife in order that the cakes may be very clean. With the back of an axe they are then pestled into pieces of the size of a date or a chestnut. If the cakes are broken with the edge of an axe, it will mean to kill them, so that method is rarely used. The broken pieces are exposed to the sunlight on a mat of paper pulp (?), and are not taken back at night so that they can receive

the frost and dew. During cloudy or windy weather, however, they are brought inside, lest dust soil them and rain wet them. If the ferment is needed in a hurry, it will be ready for use as soon as it is dried. If there is no hurry, after an exposure of about twenty days to frost and dew, it will render the wine very fragrant. The ferment must be dried. If it is wet the wine will be bad.

Wines which are fermented in the spring or in the autumn, can be kept throughout the summer. However, those wines which are prepared in the season of mulberry-fall [early winter], would be superior to those made in the spring. The mulberry-fall season is a little cold, and the method of soaking the ferment in this season is similar to that of the spring. When the fermenting is begun the top of the jar is covered with straw so that it will have a little warmth. The straw covering, however, should not be too thick, otherwise, the contents will be injured by the heat. In the spring it is not necessary to set the earthen jar on bricks. For autumn wines, the water is collected on the ninth or the nineteenth day of the ninth month. For spring wines, the water should be collected on the fifteenth or the last day of the first month, or on the second day of the second month. The ferment should be soaked in the water on the same day that the water is collected. The above-mentioned four days are the best days. Other days can also be chosen but there is a risk that the resulting wine may not be good enough for long keeping.

As to the sources of the water, river water is the best of all. In those places where no river is near, the sweetest well-water can be employed. Any water which has traces of a salty taste is not suitable for this purpose.

[10b9] Method of Exhausting the Ferment

[The times for starting fermentations] are from the tenth to the fifteenth days of [the first month of] spring, and from the fifteenth to the twentieth days of [the first month of] autumn. The reason [for choosing a range] of days lies in the fact that the weather changes may vary. Nonetheless, the fermenting will be begun at the time when the fragrant foam of the [soaking] ferment rises

[regardless of the exact day]. Too long a standing of the soaking ferment will produce a skin [on the surface], and in such a case the ferment is considered too old. A ferment which is too old will give a heavy, dull wine instead of a light, fragrant one.

The grain must be pestled fine and washed thoroughly about thirty times. If the grain is not washed clean the resulting wine will be heavy and cloudy. Generally, for one *tou* of the ferment, eight *tou* of water in the spring or seven *tou* of water in the autumn are used. Three *shih* of grain in the autumn or four *shih* of the same in the spring are used. To start the fermentation, four *tou* of millet are employed. The re-steamed grain is steamed lightly. It must be uniformly ready without any hard or raw particles. It is then cooled thoroughly by spreading it on a mat.

The ferment infusion is poured into a tub where it is mixed [with the *fan*]. Any lump present in the mixture is broken down with the hands. [The mixture is then] transferred into an earthen jar. In the spring the jar is covered with double layers of cloth, and in the autumn season a blanket is used in addition to the cloth. If the weather is very cold, a layer of straw may also be added to the coverings. After standing for one or two nights, when the grain [in the fermentation mixture] is dissolved, six more *tou* are added. For the third addition seven or eight *tou* of grain may be employed. For the fourth, the fifth, and the sixth additions the quantities of grain used [11b1] will depend upon the energy or strength of the ferment. There is no definite rule. An addition may be made after two nights, or it can also be made after three nights. There is no fixed rule. An addition can be made only after [the material previously added] has been dissolved.

Every time an addition is made, juice is drawn from the earthen jar to mix with [the new material]. Only enough is drawn to mix with the millet and break up lumps. All of it is not drawn. Every time an addition is made the contents of the earthen jar must be stirred thoroughly with a wine paddle to get a uniform mixture, then the earthen jar is covered.

Although it has been stated that [per *tou* of the ferment] three *shih* and four *shih* of grain are dissolved in the spring and autumn seasons respectively, the real point is to be able to make use skill-

fully of the energy of the ferment. When the energy of the ferment is not yet exhausted and grain can still be dissolved, more grain must be added. The more the grain that can be incorporated, the better the wine. People say that wines become sweet after the rice has been completely exhausted. This is a misunderstanding of the procedure. When the wine cools down, the evolution of gas ceases, and undissolved rice is still present: the energy of the ferment has been spent. When the wine is ready, it is squeezed clear [and placed in an earthen jar]. Through the summer the mouth of the earthen jar is covered merely with a single layer of cloth, and a piece of straw mat is cut out to cover the cloth. The mouth of the earthen jar should not in any circumstance be sealed with mud because, if this is done, the wine will turn sour.

Fermentation can also be carried out in the winter, but the result will not be as good as in the spring and autumn. The earthen jar for a winter fermentation must be covered with a thick layer of straw. In starting the fermentation [the cooked millet] is added while still warm. Once [the fermentation] has begun, for the [later] additions the millet is cooled by spreading it [on a mat]. Once the wine becomes very warm, if warm millet were used for the additions, it would turn sour.

For earthen jars of large capacity and fermentations of large quantities, one will increase the amounts in the same ratio. The addition of bran-liquid is not tabooed at all.

[12a5] Ho-tung 河東 Method of Preparing Superior Ferment

The wheat is treated at the beginning of the seventh month. The ferment is made on the seventh day [of the seventh month]. If one cannot make the cakes on that day, he may do it on any day before the twentieth of the seventh month. If one *shih* of wheat is chosen for the preparation, six *tou* of it will be roasted, three *tou* steamed, and one *tou* will be in the form of raw wheat. They are ground finely. Boil together to get the juice: mulberry leaves, five parts; lesser burdock, one part; artemisia, one part, and dogwood, one part. If dogwood is not available, smartweed can be used as the substitute. It will be wine-colored. Strain out the solid matter, and, when [the juice is] cold, mix with the ferment.

The dough should not be too wet, but is kneaded a thousand times. The caking method is the same as that for ordinary ferments.

[12b1] Method of Laying Down the Ferment

First of all, the ground is covered with wheat straw. The ferment cakes are then arranged [upon this bedding], and covered with wheat straw. Large-scale producers might employ mats made of bamboo splints, as in rearing silkworms. After [the ferment cakes] have been covered in this fashion, the door [of the house] is closed. At the end of seven days, the cakes are turned over and are covered again with wheat straw. At the end of another seven days, they are piled up and covered again. After standing for another seven days, the cakes are transferred into an earthen jar where they are stored also for seven days. At the end of this period, the cakes are taken out and dried in the sunlight.

[12b5] The Making of Wine [Collective Process]

When one *tou* of millet ferment is used, one *shih* of grain is used. Italian Millet gives only a thin wine and is of no value. In the preliminary treatment of the ferment cakes, all the surfaces including the sides and the inside of the holes must be scraped clean. Then they are crushed into pieces of the size of a date or a chestnut, and the product is dried thoroughly in the sunlight.

For a *tou* of the ferment, one *tou* and five *shêng* of water are used. If the water is collected for the fermentation at the time of the first freezing in the tenth month [November], i. e., the season of mulberry-fall, the resulting wine will be the best-season-spring wine. If, however, the water is collected on the last day of the first month [February], the wine obtained will be the good-season-spring wine. South of the Yellow River, where the climate is warm, [fermentations] are performed in the second month [March]. North of the Yellow River is cold [and fermentations] are carried out in the third month [April]. Generally, only the season around the Festival of Ch'ing-ming 清明 [Clear Sunshine, April] is used.

[13a1] The time of the first freezing is the closing of the year when the streams are settled. [This water] may be used as collected for Spring wine. Any water which is collected during the other

months must be boiled five times. After cooling, it is used to soak the ferment. Any deviation from this procedure will disturb [the wine]. The weather of the first freezing in the tenth month [November] is still warm, and there is no need yet to cover the earthen jar with straw. In the eleventh and the twelfth months, the earthen jar must be covered with millet stalks. The ferment is soaked for ten days in the winter time or seven days in the spring season. As soon as the ferment gives out a gas and fragrant foam rises up, one begins the fermentation [of the grain].

In winter when the weather is severely cold the ferment liquor will certainly freeze, even though the earthen jar has been covered with straw every day. In such a case, the ice-prisms are simply strained off, put into a kettle, and melted to obtain the liquid when one is about to begin the fermentation. The prism liquor must not be heated up, and all is returned to the earthen jar. The millet is then added. If this procedure is not followed, the charge will be injured by the chilling.

If the earthen jar is capable of holding a charge of five *shih* of grain, the first charge will consist of only one *shih* of the grain. The grain must be washed thoroughly until the wash-water appears clear. It is then cooked into a *fên* 餴 [partially cooked grain] which is in turn transferred into an empty jar and is flooded with boiling water from a kettle. The addition of boiling water will be stopped when there is a layer of water of a little more than one *ts'un* over the *fên*. [13b1] The mouth [of the earthen jar] is covered with a basin [and the contents allowed to stand] for some time. When the water has gone, the *fên* is ready and soft. This is spread out on a mat for cooling. The juice is kept in the basin. All of the lumps of the millet are broken up by the hands. [After cooling], the product is transferred into the earthen jar [which contains the liquor of soaked ferment], and is stirred with a wine paddle. The same procedure is used for each charge.

However, in the eleventh month [December] and the twelfth month [January], when the weather is cold and water freezes, the millet is added when it is as warm as the human body. For the mulberry-fall wine or the spring wines, all of the charges should be added cold. If the starting charge is added cold, additions also

will be cold. If the starting charge is warm, additions also will be warm. [These rules] must not be varied, so that cold and hot are intermixed.

As for the second charge consisting of eight *tou* and the third charge of seven *tou*, the size will depend solely on the strength of the ferment. There is no fixed quantity. In general, the grain is divided into two equal parts. The first half is used to make the hot-flooded *fên* while the other half is used to make re-steamed rice. If all of the grain is added in the form of hot-flooded *fên*, the wine will be dull. If, however, re-steamed grain is incorporated, the wine will become light and fragrant. Therefore, one simply must divide it.

[13b10] Winter fermentations will be finished in six or seven stages, while eight or nine stages are required for spring preparations. In the winter time one wants [the fermenting liquor] slightly warm, but in the spring time one wants it mildly cool. If too much grain is used, [the wine] will not mature properly, and it will be injured, so that it would be impossible to store it for a long period. In the spring the earthen jar is covered with a single layer of cloth, and in the winter season a straw mat is used for the covering. At the beginning of winter when the first fermentation is added, burning charcoal may be thrown into the earthen jar and a sword laid on its top. These will be removed after the wine is ready.

Wines that are prepared in winter will be ready after fifteen days of fermentation. Those which are fermented in spring will take ten days. In the middle of the fifth month [June], a bowlful of wine is removed from the jar and exposed to the sunlight. If the wine is of good quality it will remain unchanged. If it is inferior its color will change. Those which happen to change color should be drunk early while the good ones may be kept through the summer. But, the *ho p'ei*, after standing for a short time, is decanted. It will last until the season of mulberry-fall. If the wines are stored in a cellar, they will pick up the *ch'i* 氣 [ethereal essence] of the earth [and spoil]. They should be kept in a straw hut with several layers of straw roof to obtain the best results. A house with tile roof will get hot [and thus cannot be used for the purpose].

In the making of the ferment, in the soaking of the same, in the steaming of rice, and in preparing the fermentation, river water should be employed throughout. Those families which have not sufficient hands may use sweet well-water.

[14b1] In the *Wan pi shu* 萬畢術 [All Available Arts] of Huai-nan-tzŭ [20] it is said, "To make a thin wine heavy, rushes are steeped in it." The rushes are cut into pieces and steeped in the wine. After a while the rushes are removed and the wine will have become heavy. Whenever the fermenting charge suffers too much chilling and is prevented from developing as in the winter, proceed as follows: Boiling water is introduced into a pottery jug the mouth of which is then tightly plugged. The jug is put into a kettle of boiling water until it becomes very hot. It is then taken out of the kettle and transferred into the earthen jar containing the fermenting charge. In a short time the fermentation will start.[21]

[20] This book is now lost and known only from quotations. The latter have been collected by Sun Fêng-i 孫馮翼 and were published in the *Wên-ching-t'ang ts'ung shu* 問經堂.

[21] The translators wish to thank Prof. T. T. Shui of the Orthological Institute, Kunming, who has kindly made a number of helpful suggestions relative to the translation.

PREFIXES IN TIBETO-BURMIC

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Although Stuart N. WOLFENDEN devoted the greater part of his major work to Tibeto-Burmic prefixes,[1] an aspect of the problem which escaped his attention is the loss of consonantal prefixes in compounds. The loss of Burmese *'ă-* prefix when the root to which it is attached becomes either the first or second member of a compound is too well known to require citations.[2] Consonantal prefixes resembled the Bu. *'ă-* prefix in this respect. This linguistic process is still operative in certain Kukish languages and a vestige of it was retained in the Old Bodish numeral system.

The dropping of the consonantal prefixes is not entirely regular, and due to insufficient data the conditions under which this occurred can not be determined here. The main aim of this paper is to call attention to the problem.

The most extensively recorded Kukish language which preserves prefixes is Mara (Lakher), from which are taken the following examples of the simple prefixed root, the same root unprefixed in compound, and the same root prefixed in compound: [3]

A 1. *pa-tśʻi* "bead," *tśʻi-na* "amber bead or necklace, amber."
2. *pa-ri* "snake," *ri-ru-pʻia-pa* "name of a snake."

[1] *Outlines of Tibeto-Burman Linguistic Morphology*, RAS, London, 1929.

[2] For a discussion of the *a-* prefix in Sino-Tibetan, see Berthold LAUFER, "The Prefix *a-* in the Indo-Chinese Languages," *JRAS* (1915) 757-780; and WOLFENDEN, *op. cit.*, with his conclusion, p. 178 ff. The Khimi dialect of Khami has two *a-* prefixes: one, denoted by *a-* and pronounced like the *a* in father, is prefixed to verbs; the second, written *ă-* and pronounced like the *a* in *America*, is prefixed to nouns (see "Khimi Grammar and Vocabulary," *BSOS* 11 (1944) 386-434). An attempt to decide into which series the *a-* prefixes of various languages fall may require a precise record of the phonemes and tones. For early studies of prefixes, see Anton SCHIEFNER, "Tibetische Studien," *Bull. hist.-phil. Acad. de St. Petersbourg* 8 (1865) 296, and A. BOLLER, "Die Präfixe mit vocalischem und gutturalem Anlaute in den einsilbigen Sprachen," *Sitz., Ak. der Wiss., Wien*, 61 (1869) 445-91.

[3] From Fred. W. SAVIDGE, *A Grammar and Dictionary of the Lakher Language*, Allahabad, 1908.

3. *pa-vaw* " bird," *vaw-kʻei* " species of hornbill," *vaw-pa-hlå* " hill partridge," *vaw-vu* " pheasant."
4. *pa-tʻei* " fruit; to bear fruit," *tʻei-hla-pa* " edible fruits," *tʻei-hia* " mango," *tʻei-ku, tʻei-tʻli* " species of figs," *tʻei-tʻu* " orange," etc.
5. *pa-tśʻau* " wall, partition," *tśʻau-pa-da-da* " name of the partition in the house by the bed."
6. *pa-kaw, kaw* " hole."
7. *pa-la* " cotton, yarn," *la-hmao* " spun cotton on the spindle," *la-tao* " a reel or ball of cotton," *la-bå-pa-pań* " name of a cloth," *la-hmi* " a cotton spindle," *la-ri* " cotton gin."
8. *pa-kʻu* " knee," *kʻu-kʻań* " patella," *kʻu-bi* " knock-kneed."
9. *pa-zau* " urine," *zau-pa-hrai* " a stoppage of urine, to have a stoppage of urine."
10. *pa-ka* " mouth," *ka-hlu* " to gossip, to be talkative, to divulge a secret " (*hlu* " much, many, plentiful "; cf. Amer. slang " big mouth ").

But the prefixed root also occurs in compounds:

B 1. *pa-tśʻi* " a bead," *pa-tśʻi-ri* " necklace."
2. *pa-ri* " snake," *pa-ri-pi* " a large snake, python."
3. *pa-vaw* " bird," *pa-vaw-hmi* " feather."
7. *pa-la* " cotton, yarn," *pa-la-ri* " cotton thread," *pa-la-hlo-na* " a cotton reel."
8. *pa-kʻu* " knee," *pa-kʻu-pei-nei* " to kneel."
9. *pa-zau* " urine," *pa-zau-ti* " urine " (lit. " urine water ").
11. *pa-tań* " nail, claw," *pa-tań-kia-pa-hnań* " the quick of the nail," *pa-tań-a-ia-pa-hnań* " to have a hangnail, hangnail."
12. *pa-tʻi-pa-lao* " heart, mind," *pa-tʻi-pa-lao-a-pʻa* " to be good natured," *-a-pa-kua* " to change the mind," *-nai* " easy going, good tempered," etc.

The prefix *tśa-* drops similarly in compounds:

C 1. *tśa-kei* " tiger," *kei-tśʻań* " leopard."
2. *tśa-ia, ia* " crab," *ia-ka* " a prawn," *ia-pa-hnań* " the pouch under a crab for its young."
3. *tśa-věo* " bear," *věo-ti-kʻå-pa* " a small species of bear "

(PARRY[4] gave Tlongsai dial. *tśa-ve* " bear," *ve-ti-k'å-pa* " small bear," *veu-tla* " bear trap " (L. *vom-tlāk*); Hawthai *tśa-ve* " bear," *ve-ti-k'å-pa* " small bear," *ve-tla* " bear trap," and similarly for Zeuhnang and Sabeu dialects).

But *tśa-* is also retained in compounds:

D 1. *tśa-ia* " crab," *tśa-ia-p'ei-pi* " claw of a crab."
4. *tśa-va* " stream, river," *tśa-va-hnå* " small valley," *tśa-va-pi* " river," *tśa-va-t'a* " down stream."

No absolute distinction can be drawn between the usage of the non-prefixed and the prefixed roots in compounds. It may be stated that in going from the prefixed simple root to the non-prefixed root in compounds (sections A and C above) the meaning usually changes from the general to the particular, the genera to the species; note A 1-5, C 1-3.

But where the root is modified by a suffixed adjective such as *-pi* " big," or *-a-p'a* " good," the prefix is not dropped (B 2, 12); and conversely, where the root is used as an adjective as " bird hair " = " feather " (B 3) or " urine water " (B 9) the prefix is not dropped. Verbs seem more often to be formed from the prefixed forms. Due to the degenerate nature of the Mara finals, by which several roots of quite different origins have come to be pronounced the same, it is often difficult to determine the original meaning of a compound even when the different parts of the compound can be found in the Mara dictionary. Consequently a more definite analysis of the distinction between the prefixed and the non-prefixed forms of the root in compounds can not be given at present.

The original prefixes of the numerals may be dropped in Mara but we are left in the dark as to when. The numerals with prefixes are given on page 6 as: *-pa-li* " 4." *-pa-ṅå* " 5." *-tśa-ru* " 6." *-sari* " 7." *-tśa-ri* " 8." *-tśa-ki* " 9."

In the examples in the grammar, Savidge always used these long forms. And yet in the English-Lakher portion of the dictionary, side by side with the corresponding long forms, are given: *li* " 4." *ṅå* " 5." *ri* " 8." *ki* " 9."

[4] N. E. PARRY, *The Lakhers*, London, 1932, 505-6.

Although Mara is unfortunately the only extensively recorded Kukish language preserving original prefixes, enough evidence has been collected to show that other Kukish languages show the same characteristic; thus [5] in Kwoireng *tśa-kwi* " tiger," *kwi-ruk-na* " leopard "; *tśă-gi* " iron," *ma-rui gi* " copper "; and Khunggoi *sa-k'u* " tiger," *ku-ne'* " leopard "; Maram *a-kau* " tiger," *kau-tau* " leopard "; Ukhrul *ṅă-lei* " soil," *lei-pa* " clay, mud."

But it is in the numeral systems of the Kukish languages of the Naga Hills that the disappearance of prefixes in compounds is particularly evident. Thus in Maring: *kă-ni* " 2," *som-ni* " 20." *kwi-yum* " 3," *som-t'um* " 30." (The reason for the change in initial is unknown). *p'i-li* " 4," *som-li* " 40." *p'ă-ṅa* " 5," *som-ṅa* " 50." *t'a-ruk* " 6," *som-ruk* " 60." *tă-tśot* " 8," *som-tśat* " 80." *ta-ko* " 9," *som-ko* " 90."

And in Kapwi: *ka-ni* " 2," *som-ni* " 20." (But *som ka-ni to* " 12 "). *ma-li* " 4," *som-li* " 40." *pa-ṅ* " 5," *som-ṅa* " 50." *ke-ruk* " 6," *som-ruk* " 60." *ka-ret* " 8," but *som ka-ret* " 80." *ka-kwa* " 9," but *som ka-kwa* " 90."

In Kabui: *ka-tum* " 3," *tum ru* " 30." *pă-dai* " 4," *rek dai* " 40." *pă-ṅu* " 5," *re-ṅu* " 50." *tśa-ruk* " 6," but *rek tśa-ru* " 60." *tśă-nai* " 7," but *rek tśa-nai* " 70." *ta-tśat* " 8," but *rek ta-tśat* " 80." *tśă-ku* " 9," but *rek tśa-ku* " 90."

Similar to Kabui above, Khoirao and Kwoireng show no loss of prefixes from " 60 " to " 90," while Anal shows no such loss from " 50 " to " 90 " and Phadeng from " 40 " to " 90." However they do drop prefixes in the lower multiples of ten, and it appears that these languages formed the higher multiples at a late date.

Some trace of this loss of prefixes in compounds is still found in the Old Bodish numeral system. Thus we find: [6] *g-tśig* " 1," *tś'ig* " 1 " (as first part of comp. numbers; in other compounds (see

[5] From the writer's manuscript on Kukish, mainly from W. McCulloch, Account of the Valley of Munnipore and of the Hill Tribes, with a Comparative Vocabulary of the Munnipore and other Languages, Selections from the Records of the Government of India (Foreign Department), no. 27, Calcutta, 1859.

[6] These may be most conveniently found in the *Grammaire de la langue tibétaine*, by Ph(ilippe) Éd(ouard) Foucaux, Paris, 1858, 38 ff., or the *Grammar of the Tibetan Language in English*, by Alexander Csoma de Körös, Calcutta, 1834, 62-3, but also may be found in Jäschke's dictionary.

JÄSCHKE 157a) seems to mean " alone "). *g-nyis* " 2," *nyis* " 2 " (as first part of comp.), *nyer-* " 20." *g-sum* " 3," *sum* " 3 " (as first part of compounds, see J. 574), *so-* " 30." *b-źi* " 4," *źe-* " 40." *l-ṅa* " 5," *ṅa-* " 50." *d-rug* " 6," *re-* " 60." *b-dun* " 7," *don-* " 70." *br-gyad* " 8," *gya-* " 80." *d-gu* " 9," *go-* " 90." *b-tśu* " 10," **tśo-* (in comp.).

tś'ig may have been the earliest form for " 1," for in the earliest documents *tś'ig* and *gtś'ig* are found very frequently. The multiples of " 10 " occur in compounds for " 21 "-" 29," " 31 "-" 39," etc. Since the following numerals all begin with prefixed consonants, the latter probably caused the dropping of the original final consonants in " 30," " 60 " and " 80 " at a very early period. We may state this because the word for " 7 " is probably a purely Bodish coinage, not existing outside of that group except in a few compound higher numerals borrowed from Bodish. The final *-r* in " 20 " has not been accounted for.

If we leave out of consideration for the moment the word for " 10 " it will be found that all the simple numerals have low grade vowels, while all the multiples of ten except " 60 " have the corresponding guṇa vowels: " 20," " 30," " 40," " 70," and " 90." No evidence for gradation of the *a* series has been found in ST, so no change occurred in " 50 " or " 80." The vowel in " 60 " is so irregular that the word would not be recognized as from the same root as the simple numral " 6 " if it were not for the other multiples of ten. Yet Old Bodish *i* and *u* sometimes interchange, although the conditions under which this occurs are not clear; thus *ādzin* (pres.), (*b*) *zuṅ* (pf.), *gzuṅ* (fut.), *zuṅ* (*s*) (imperative) " grasp "; *ābyin, p'yuṅ, dbyuṅ, p'yuṅ* " take out "; *ābig* (*s*), *p'igs, dbig, p'ig* (*s*) or *ābug* (*s*), *p'ug, dbug, p'ug* " sting "; *āp'ur* " to fly," Gtsang *āp'ir*. And if the *u* of **rug* became *i*, **rig*, with the *-g* dropping, the guṇa grade of *i* would give *re*, the form actually found. As the u>i shift is not clear, this explanation must remain hypothetical for the present.

We would expect " 10 " in compounds to be *tśo* in place of the simple number *btśu*, if the lack of prefix and gunation were characteristic of numerals entering into compounds as was found above for the multiples of ten. But actually *btśu* occurs most frequently

in Old Bodish, and *btśo*—with gunation but with the prefix—is found only in the compounds for "15" and "18." However, Sbalti, which preserves the *b-* of Old Bodish as *p'-* in *p'tśu* "10," has *tśo-* in "12," "15." In Burig, where O. B. *b-* is represented by a spirant (except *r-* before initial *d*) has *stśu* "10," but *tśo* in "15." Ladwags (Francke) has the same phonetic development of O. B. *b-* as *Burig*; and *stśu* is "10," but *tśo-* in "15" and "18." Where *tśo-* is not used as the first part of compounds for "10" in these W. B. dialects, *tśu-* seems to be used.

Because of the archaic nature of these W. Bodish dialects, it seems probable that proto-Bodish once used *tśo-* for "10" as the first part of compounds and that this was displaced in W. B. by *tśu-* and in Old Bodish by *btśu*.

Sometime after the words for multiples of ten which ended in a consonant had lost this final, Bodish proper began the use of *b-dun* for "seven" and by vowel gradation created the word for "70." This gives us an approximate idea of how late gradation was an active process in Bodish territory.

Although the total amount of evidence on the use of prefixes is not extensive, yet we may certainly conclude that they were not fixed in proto-Sino-Tibetan. They appear to be employed as classifiers with indefinite nouns and not to occur when the noun was more specifically defined by entering into a compound.

MARCO POLO QUITS CHINA

Yung-lo ta-tien 19418. 15b has preserved a quotation from the *Ching-shih ta-tien* 經世大典 which ought to be a determining factor in fixing the date of Marco Polo's departure from China. Western students seem to have agreed upon 1292 for this date, but the following text would seem to set his departure at the end of 1290 or the very beginning of 1291. The Polos themselves are not, of course, mentioned, but the text does signify that on September 11, 1290 the three men who quit China with the Polos were on the point of departing. The Wu-lu-tê, A-pi-shih-ha, and Huochê mentioned here are certainly to be equated with Marco's Oulatai, Apousca, and Coja.

永樂大典一萬九千四百十八頁十五下：（至元二十七年八月）十七日尚書阿難答、都事別不花等奏：平章沙不丁上言：今年三月奉旨遣兀魯觧、阿必失呵、火者取道馬八兒、往阿魯渾大王位下。同行一百六十人、內九十人已支分例；餘七十人聞是諸官所贈遺及買得者、乞不給分例口粮！奉旨：勿與之！

YANG Chih-chiu 楊志玖
and
Ho Yung-chi 何永佶

Chungking